

**PERMIT TO OPERATE No. 5840  
AND  
PART 70 OPERATING PERMIT No. 5840**

**CELITE CORPORATION  
LOMPOC PLANT**

**2500 Miguelito Road, Lompoc, California**

**OPERATOR**

**Celite Corporation (“Celite”)**

**OWNERSHIP**

**Celite Corporation (“Celite”)**

**Santa Barbara County  
Air Pollution Control APCD**

**April 11, 2000**



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## ABBREVIATIONS/ACRONYMS

AP-42	USEPA's <i>Compilation of Emission Factors</i>
APCD	Santa Barbara County Air Pollution Control APCD
API	American Petroleum Institute
ASTM	American Society for Testing Materials
BACT	Best Available Control Technology
Bhp	brake horsepower
BSFC	brake specific fuel consumption
CAAA	Clean Air Act Amendments of 1990 (federal)
CAC	California Administrative Code
CAM	compliance assurance monitoring
CEMS	continuous emissions monitoring system
Dscf(m)	dry standard cubic foot (per minute)
EU	emission unit
°F	degree Fahrenheit
gal	gallon
gr	grain
H <sub>2</sub> S	hydrogen sulfide
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
HHV	high heating value
I&M	inspection & maintenance
IC	internal combustion
k	kilo (thousand)
l	liter
lb	pound
lbs/day	pounds per day
lbs/hr	pounds per hour
LPG	liquid petroleum gas
M	mega (million)
MACT	Maximum Achievable Control Technology
MM	million
MW	molecular weight
NAR	Non-attainment Review
NEI	net emissions increase
NG	natural gas
NSPS	New Source Performance Standards
O <sub>2</sub>	oxygen
ppm(vd or w)	parts per million (volume dry or weight)
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PTO	Permit to Operate
RACT	Reasonably Available Control Technology
ROC	reactive organic compounds, same as "VOC" as used in this permit
scf	standard cubic foot
scfd (or scfm)	standard cubic feet per day (or per minute)
SIP	State Implementation Plan
SSID	Stationary Source ID
STP	standard temperature (60°F) and pressure (29.92 inches of mercury)
THC	total hydrocarbons
tpy, TPY	tons per year
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
VE	visible emissions
VRS	vapor recovery system

## 1.0 Introduction

### 1.1 Purpose

General. The Santa Barbara County Air Pollution Control District (APCD) is responsible for implementing all applicable federal, state and local air pollution requirements which affect any stationary source of air pollution in Santa Barbara County. The federal requirements include regulations listed in the Code of Federal Regulations: 40 CFR Parts 50, 51, 52, 55, 61, 63, 68, 70 and 82. The State regulations may be found in the California Health & Safety Code, Division 26, Section 39000 et seq. The applicable local regulations can be found in the APCD's Rules and Regulations.

The County is designated as an ozone non-attainment area for both the state and federal ambient air quality standards. The County is also designated a non-attainment area for the state PM<sub>10</sub> ambient air quality standard.

Part 70 Permitting. The issuance of this Part 70 permit to the Lompoc plant satisfies the permit issuance requirements of the APCD's Part 70 operating permit program. The Lompoc plant is the *Celite* stationary source (SSID = 1735), which is a major source for VOC<sup>1</sup>, NO<sub>x</sub>, SO<sub>x</sub>, CO, PM and PM<sub>10</sub>. Conditions listed in this permit are based on federal, state or local rules and requirements. Sections 9.A, 9.B and 9.C of this permit are enforceable by the APCD, the USEPA and the public since these sections are federally enforceable under Part 70. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable. Conditions listed in Section 9.D are "APCD-only" enforceable. Please note this permit is a consolidation of the Title V permitting requirements and an APCD reevaluation of the existing Celite primary operating permit (PTO 5840).

Pursuant to the stated aims of Title V of the CAAA of 1990 (i.e., the Part 70 operating permit program), this permit has been designed to meet three objectives. First, compliance with all conditions in this permit ensures compliance with all federally enforceable requirements for the facility. Second, the permit is a comprehensive document to be used as a reference by the permittee, the regulatory agencies and the public to assess compliance. Third, this permit is a consolidation of Title V, Part 70 permitting requirements, the scheduled APCD reevaluation of Celite's existing primary operating permit (PTO 5840) and various other APCD permits that have been issued for this facility.

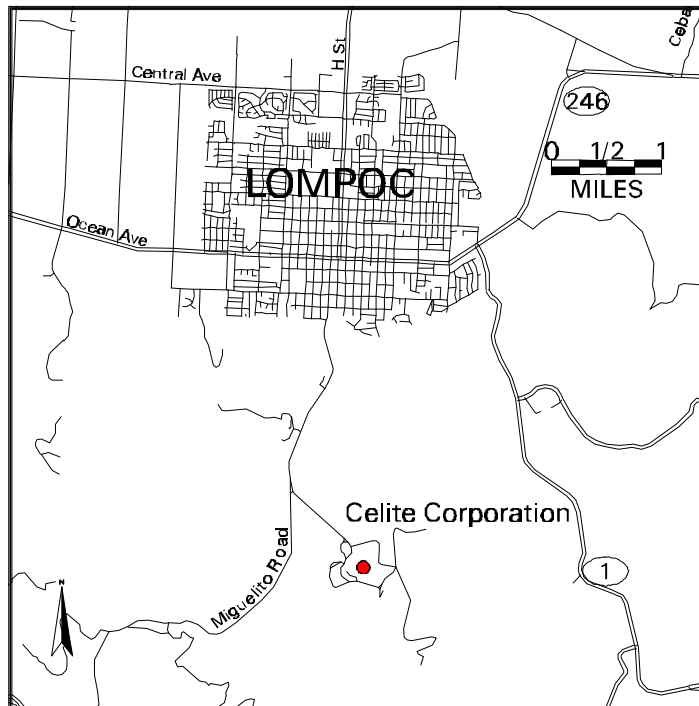
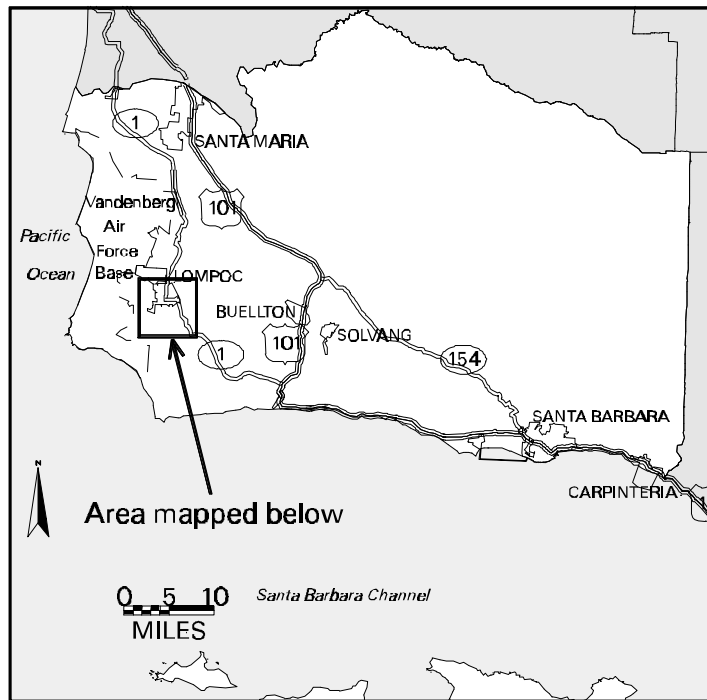
### 1.2 Facility Overview

- 1.2.1 Facility Overview: Celite Corporation ("Celite") is the sole owner and operator of the Lompoc plant, located at 2500 Miguelito Road, approximately one mile south of the City of Lompoc, California (UTM coordinates: Zone 10, East 733.7 km, North 3831.3 km). Both the plant and the mine are located in an unincorporated area of Santa Barbara County. For APCD regulatory

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<sup>1</sup> VOC as defined in Regulation XIII has the same meaning as reactive organic compounds as defined in Rule 102. The term VOC shall be used throughout the remainder of this document, but where used in the context of the Part 70 regulation, the reader shall interpret the term as VOC.

**Figure 1.1 Location Map for The Lompoc plant**





purposes, the facility location is in the Northern Zone of Santa Barbara County<sup>2</sup>. Figure 1.1 shows the relative location of the facility within the county.

Diatomaceous earth (DE) mining and processing has occurred at this site for over 100 years. Although parts of the plant were built before 1950, most of it was built in the 1950's in a canyon south of the City of Lompoc. Thus, construction and operation predated the formation of the APCD. The APCD first issued permits for the systems to Johns-Manville, which later became Manville Sales Corporation. Celite Corporation purchased the mine facility from Manville Sales Corporation in 1991. The bulk of the mining operations take place on lands adjacent the plant, eliminating the need to use public roads to transport most of the ore to the plant. Numerous changes have been made at the site resulting in increased capacities in certain areas of the plant. Product (most made from DE) is transported via truck and rail to distributors and customers.

The *Celite – Lompoc Plant* stationary source consists of a single facility, FID #0012.

The Lompoc Plant consists of the following systems:

- Crushing Plant
- Natural product line (#11 System)
- Product Lines 3, 5, 6 and 7 (capable of producing natural and calcined product)
- Snow Floss Plant
- Synthetic Silicate Plant
- Acid-washed filter aid plant
- Mortar Plant
- Pellet Plant
- Chromosorb Plant
- Celite Analytical Filter Aid (CAFA) Plant
- Experimental Plant
- Truck and Railcar Loading
- Central Waste Handling
- Waste Recovery and Recycling

Celite Corporation operates DE mining and processing facilities. DE is a sedimentary deposit composed of fossilized diatoms which had siliceous skeletons. Celite mines and mills diatomite into powders of various grades for use by industries for in many applications. Diatomite is surface mined and transported via an underground railroad to crushing. It is then milled and dried. The natural product is classified into a variety of grades and undergoes no additional processing before being bagged for shipment to distributors and customers.

Other diatomite products are the calcinated and flux-calcinated powders. Natural product is transformed into these types via exposure to high temperatures in rotary kilns. Flux-calcined product is calcined in the presence of soda ash. The material is thereafter classified into fine and coarse particle sizes and then either packed into bags or bulk loaded for shipment. Smaller volumes of DE are processed using process additives. The dryers and kilns are heated by external combustion. Internal Combustion engines (ICEs) drive various equipment items.

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<sup>2</sup> APCD Rule 102, Definition: "Northern Zone"

- 1.2.2 Facility New Source Review Overview: Since the issuance of the last facility-wide operating permit in April of 1990, there have been 32 administrative actions, including 13 NSR permit actions. These were:

**TABLE 1.2.2 (A). AUTHORITY TO CONSTRUCT (ATCs)**

<b>ATC</b>	<b>Permit Description</b>	<b>Permit issuance date</b>
8202	Replace manual bag packing with automated packer & new baghouse	11-23-93
8945	Implement Rule 333 for 3 ICE 8115, 8716 and 8717	6-24-93
8962	Modification of #5 System air conveyance system	1-4-94
9156	Added baghouse and ducting for soda ash bins	2-25-94
9191	Modification of #7 System Reject Refeed Mechanism	6-27-94 (expired, unused)
9192	Modified ventilation system for #3, 4 and 5 Systems and the main incline belts discharge chutes	1-26-95
9193	Replaced an open baghouse with 2 closed Sintamatic dust collectors ventilating 3 and 4 bulk bin and semibulk stations.	3-31-95
9240	Modification to bring both Synthetic Silicate Plant boilers into compliance with Rule 342	11-30-95
9327	Addition of a baghouse	1-17-95 (expired, unused)
9353	Replacement of kiln burner in #7 System	6-22-95
9367	Replacement of kiln burner in #3, 5 and 6 System	7-21-95
9551	Add air sifting operation for special product grade	4-30-97
9616	Add 6P packing station	12-23-96
9757	Add Celpure Plant for new product grade	12-5-97
9863	Add pump, blower, screw and baghouse to #3 System	3-20-98
9696	Add 5 bagging stations	12-2-98
9922	Replacement of ICE 8700 with propane fired unit	5-29-98
10023	Replacement of General Waste Baghouse	1-21-98

**TABLE 1.2.2 (B). PERMIT TO OPERATE (PTOs)**

<b>PTO</b>	<b>Permit Description</b>	<b>Permit issuance date</b>
8018	22 IC Engines	5-15-92
8202	Replace manual bag packing with automated packer & new baghouse	6-16-94
8945	Implement Rule 333 for 3 ICE 8115, 8716 and 8717	12-13-93
9156	Added baghouse and ducting for soda ash bins	9-12-94
9192	Modified ventilation system for #3, 4 and 5 Systems and the main incline belts discharge chutes	8-31-95
9193	Replaced an open baghouse with 2 Sintamatic dust collectors	8-17-95
9240	Modification to bring both Synthetic Silicate Plant boilers into compliance with Rule 342	9-13-96
9353	Replacement of kiln burner in #7 System	10-18-96
9367	Replacement of kiln burner in #3, 5 & 6 System	8-7-96
9551	Add air sifting operation for special product grade,	9-5-97
9616	Add 6P packing station	1-9-98

### **1.3 Emission Sources**

Air pollution emissions from the Lompoc plant are primarily the result of combustion sources and non-metallic mineral drying and processing. Section 4 of the permit provides the APCD's engineering analysis of these emission sources. Section 5 of the permit describes the emissions from the Lompoc plant, and also lists the potential emissions from non-permitted emission units. A list of all permitted equipment is provided in Section 10.6.

### **1.4 Emission Control Overview**

Air quality emission controls are utilized at the Lompoc plant for a number of emission units to reduce air pollution emissions. The emission controls employed at the plant include:

- Use of Cleanable High Efficiency Air Filters (CHEAFs) for dust producing wet end equipment, including the kilns and furnaces
- Use of baghouses of many types and sizes for particulate matter control
- Use of rotoclones for organic fumes and dust emissions
- Ultra low-NOx burner for No. 2 boiler
- Timing retard for two engines
- High Efficiency Venturi Scrubber

### **1.5 Offsets/Emission Reduction Credit Overview**

This facility does not require emission offsets nor does it provide emission reduction credits.

### **1.6 Part 70 Operating Permit Overview**

- 1.6.1 Permit Life and Federally enforceable Requirements: All federally enforceable requirements are listed in 40 CFR Part 70.2 (*Definitions*) under "applicable requirements." These include all SIP-approved APCD Rules, all conditions in the APCD-issued Authority to Construct permits, and all conditions applicable to major sources

under federally promulgated rules and regulations. All these requirements are enforceable by the public under CAAA. (See Tables 3.1 and 3.2 for a list of federally enforceable requirements). The Part 70 permit expires five years from the date of issuance, with an application required to be submitted for renewal.

- 1.6.2 **Insignificant Emissions Units:** Equipment or activities exempted from permitting under APCD Rule 202 are considered as insignificant emissions units. The guidance under the USEPA's White Paper II, Sections C.2.c and C.2.d, applies to insignificant emission units. (See Section 3.1 for the Insignificant Equipment Unit list)
- 1.6.3 **Federal Potential to Emit:** The Celite facility qualifies as a "Part 70 Source" because the source has a federal potential to emit (PTE) more than 100 tons per year of regulated air pollutants. Since the facility's emissions exceeded the Part 70 "major source" permit threshold exclusive of fugitive emissions, fugitive emissions have not been quantified.
- 1.6.4 **Permit Shield:** District Rule 1303 and the federal Clean Air Act provide that an operator may request a permit shield to help clarify the operator's federal compliance responsibilities under the Part 70 permit. Under a permit shield, subject to certain limitations, compliance with the conditions of the permit is deemed to be in compliance with other applicable provisions of the Clean Air Act, provided the applicable provisions are included in the permit. Permit shields cannot be indiscriminately granted with respect to all federal requirements, and the APCD has discretion on whether to grant a permit shield. Celite has requested a permit shield with respect to the following:

Permit-Exempt/Insignificant Activities (Section 3.1 and Attachment 10.6)  
Source Testing/Sampling (Section 4.11)  
BACT Requirements (Table 4.2)  
Emission Limit Table (Table 9.C)  
Permit Conditions (Sections 9.A, 9.B, 9.C)

The APCD has reviewed the above request, and has decided it would be appropriate to grant the permit shield for the BACT performance standards listed in Table 4.2 for the #345 baghouse (APCD ID# 3-12). The APCD has also determined that a permit shield is appropriate for emission standards in specific SIP rules for which emission standards have been directly incorporated into the Part 70 permit. The following permit shields are granted:

- Rule 309.E.3 SO<sub>x</sub> lb/hr emissions standards for equipment units ID#'s 2-7 through 2-16
- Rule 333 emission standards for internal combustion engines 8716 and 8717
- Rule 342 emission standards for Boiler #2
- Rule 304 and Rule 306 PM standards for all baghouses listed in Table 9.C.5.
- Rule 311 for all fuel burning equipment
- NSPS Subpart OOO emission standard for baghouses with APCD ID#'s 3-14 and 3-17
- Rule 309.E.3.b NO<sub>x</sub> emissions standard for fuel burning equipment with APCD ID#'s 1-1 through 1-16 and 2-1 through 2-5 (reference Table 9.C)
- Rule 309.E.3.a SO<sub>2</sub> emission standard for baghouses with ID#'s 3-7, 3-8, 3-16, 3-25 and 3-30 (reference Table 9.C)
- A permit shield has been granted for all equipment listed in section 3.1.1 except equipment items that are associated with a Rule 202 exemption that contains a gatekeeper provision. Therefore, only the following section 3.1.1 equipment qualifies for this shield: a 3.5 bhp portable striper and other equipment used in maintenance painting activities; trains used for transportation of freight; 2 cranes, forklifts, company automobiles and mine vehicles as H&SC 42310 vehicles; a gasoline fired 16 bhp ICE used to drive a portable air compressor, an 18 bhp propane-fired ICE used to drive a vacuum system, a 9 bhp gasoline-fired ICE used to drive a portable concrete mixer, six 10.5 bhp diesel-fired ICEs used to power mobile quarry flood lights as ICEs rated at less than 20 bhp; one natural gas fired 200

bhp stationary emergency electrical power generator and two diesel-fired 200 bhp stationary emergency electrical power generators

- BACT performance standards in Table 4.8 for #345 baghouse (APCD ID# 3-12)

The APCD determined that the other shield requests were overly broad and/or not consistent with the intent of the shield provisions of 40CFR Part 70. A shield should be specific to an applicable requirement (e.g., a SIP approved Rule), and where relevant portions of the requirement have been included in the permit, compliance with the permit is deemed to be compliance with the applicable portions of the Rule and Clean Air Act. For instance, if emission standards from a Rule are clearly specified in enforceable conditions in the Part 70 permit, a shield could be provided.

- 1.6.5 Alternate Operating Scenarios: A major source may be permitted to operate under different operating scenarios, if appropriate descriptions of such scenarios are included in its Part 70 permit application and if such operations are allowed under federally-enforceable rules. Celite requested permitted alternative operating scenarios for burning of #6 oil in all kiln and furnace burners, the silicate boilers and the burner in the fuel-oil heater. These scenarios have been built into the permit conditions and emission tables. Also, Celite requested an alternative permitted operating scenario in which the silicates plant produces a magnesium silicates product rather than the calcium silicates product. The difference is that the lime system is not used for the magnesium silicates product. Criteria emissions are expected to be similar for both scenarios.
- 1.6.6 Compliance Certification: Part 70 permit holders must certify compliance with all applicable federally-enforceable requirements including permit conditions. Such certification must accompany each Part 70 permit application; and, be re-submitted annually on or before March 1<sup>st</sup> or on a more frequent schedule specified in the permit. Each certification is signed by a “responsible official” of the owner/operator company whose name and address is listed prominently in the Part 70 permit. (*see Section 1.6.9 below*)
- 1.6.7 Permit Reopening: Part 70 permits are re-opened and revised if the source becomes subject to a new rule or new permit conditions are necessary to ensure compliance with existing rules. The permits are also re-opened if they contain a material mistake or the emission limitations or other conditions are based on inaccurate permit application data.
- 1.6.8 Hazardous Air Pollutants (HAPs): Part 70 permits also regulate emission of HAPs from major sources through the imposition of maximum achievable control technology (MACT), where applicable. The federal PTE for HAP emissions from a source is estimated to determine MACT or any other rule applicability. (*see Sections 4.11 and 5.4*).
- 1.6.9 Responsible Official: The designated responsible official and their mailing address is:

Mr. Kenneth Schweigert, Vice President of Operations  
Celite Corporation  
2500 Miguelito Road  
Lompoc, California 93436

## 2.0 Process Description

### 2.1 Process Summary

- 2.1 Process Summary: Celite operates diatomaceous earth (DE) mining and processing facilities. Ore is processed into powders of various grades for uses such as filtration aids, fillers and biocatalyst carriers. Most of the ore is surface mined from lands adjacent to the plant, typically has about 40% to 45% moisture in situ and contains variable amounts of sulfur. It is transported initially via earth moving equipment to vertical shafts (“glory holes”) to an underground railway that transports the ore to initial crushing. Powder Mills production processes consist of varying combinations of crushing, milling, drying, calcining, conveying, classifying and packing. Other wet and dry processing of diatomite and other materials occurs on a smaller scale at the silicates plant and various other areas of the facility. Production equipment includes equipment such as crushers, mills, boilers, furnaces, kilns, classifiers, packers, material handling equipment, storage bins, compressors, waste handling equipment, and IC engines.

#### 2.1.1 Main Production:

The plant consists of the 5 Powder Mills systems, smaller ancillary processing systems, packing equipment, truck and railcar loading systems, waste handling systems and various support systems

Earth moving equipment hauls mined diatomite from the quarries to stockpiles adjacent to the glory holes. Soil binders may be used to control fugitive dust from storage piles.

Material is pushed from the stock piles into the glory holes. Rail cars are filled by opening the glory hole gates at the load out stations in the haulage tunnel. The diatomite is then hauled by underground railroad to the underground crushing plant. The crude diatomite is then discharged from the rail car bottoms into feed bins and crushed in the underground crushing plant.

Initial crushing is performed inside enclosures, and conveyors move the crushed DE to the crude bins. Crushing, conveying, and bin loading emissions are controlled by two baghouses.

The Lompoc plant has 5 main production lines. The ore from the crusher plant is fed into one of 5 main production lines. Initially crushed crude is milled and dried in a current of heated air. The powder mills produce natural (uncalcined) and calcined DE.<sup>(a)</sup> Throughout the plant, blowers, screws, bucket elevators and similar devices mill and convey the DE. Cyclones, preseparators, separators, reseparator, air sifters and similar equipment mill and separate product by density, size, configuration and DE waste. After drying, the natural powder is divided into fine and coarse grades and then bagged or directed to enclosed bulk rail cars or trailers. Some material from the Powder Mills, virgin DE or other virgin materials are milled, classified, chemically treated and/or used to make various other products in the ancillary smaller processing lines. DE is sold in bulk (via railcars or trucks) or in bags.

- 2.1.2 Waste Handling: Waste DE from the Powder Mills processes is sent to the Central Waste system where it is slurried and pumped to the mine. Initially, the dust is blown through pipelines to the central waste area into baghouses (General Waste and Preseparator waste). The baghouses discharge via covered chutes into a water tank with an agitator. Water is applied in the chutes to minimize the fugitive dust generated by the discharge of the material into the water. A dust truck with an enclosed container bed is used to empty central waste bins when the central waste system is overloaded. Fugitive dust from the loading of waste dust into the truck is minimized by connection of the truck to a vacuum line. The dust truck is driven to the waste dump in the mine and dumped by gravity.

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<sup>(a)</sup>Except Primary Processing Line 11, which produces only natural product. Line 11 is not equipped with a kiln.

The dust truck and containers called “load lugger boxes” (about 5 ft<sup>3</sup>) are used to collect waste material. These boxes are hauled to the waste area of the mine and are dumped by gravity.

## **2.2 Support Systems**

2.2.2 *Power Generation:* Electrical power for the Lompoc plant is currently provided by Pacific Gas and Electric. The plant has two stand-by generators which are used in the event of a power outage. They are driven by ICEs and are rated at 75 and 175 kilowatts.

2.2.3 *Other:* Other support systems operate at the facility.

## **2.3 Mining Activities**

2.3.1 *Surface Mining:* Diatomite is surface mined from a number of quarries, the majority of which are located on properties adjacent to the plant. The material is hauled from the quarries to stockpiles adjacent to the glory holes if classified as ore. Material is pushed from the stockpiles into the glory holes. Rail cars are filled by opening the glory hole gates at the load out stations in the underground haulage tunnel. The electrical rail system transports the material from the glory hole load out stations to the underground crushing plant. All of the Lompoc facility’s diesel-powered mobile mining equipment is exempt from permitting. Fugitive dust is generated during activities such as the initial extraction of the material from the ground, loading and unloading (into storage piles and then from the piles to glory holes), driving on unpaved roads, and wind erosion.

## **2.4 Maintenance/Degreasing Activities**

2.4.1 *Paints and Coatings:* Maintenance painting on the Lompoc plant is conducted on an intermittent basis.

2.4.2 *Solvent Usage:* Solvents not used for surface coating thinning may be used at the plant for routine maintenance activities. Routine maintenance activities include activities such as parts cleaning in small cold solvent degreasers and wipe cleaning with rags.

2.4.3 *Abrasive Blasting:* Celite uses portable abrasive blasting equipment. This equipment is currently exempt from permit and listed in Section 3.1. However, the engines that compress air for the blaster are included as permitted ICEs.

## **2.5 Other Processes**

Celite has stated that no other processes exist that would be subject to permit other than that stated in this permit and the permit application.

## **3.0 Regulatory Review**

This Section identifies the federal, state and local rules and regulations applicable to The Lompoc plant.

### **3.1 Rule Exemptions Claimed**

3.1.1 *APCD Rule 202 (Exemptions to Rule 201):* Celite has requested a number of exemptions under this rule. An exemption from permit, however, does not necessarily grant relief from any applicable prohibitory rule. The following exemptions were reviewed by the APCD and determined to be applicable:

- Section 202.U.2.a for various degreasing equipment with aggregate surface area totaling less than 10 square feet
- Section 202.M.15 for various stationary and portable welding equipment
- Section 202.L.6 for various furnaces used exclusively for space heating
- Section 202.V.2 for the #3 fuel Oil Tank, Silicates Day tank, Powder Mill Tank and the Heavy Duty Garage (Diesel) Tank for storage of <40° API gravity fuel oil
- Section 202.V.3 for oil tanks of unused and waste oil as storage of lubricating oils
- Section 202.G.1.a for various water heaters, one natural gas fired 4.4 MMBtu/hr pellet plant rotary kiln, one natural gas fired 4.5 MMBtu/hr pellet plant dryer, one natural gas fired 0.11 MMBtu/hr CAFA rotary kiln, one 2.5 MMBtu/hr natural gas fired shrink wrap unit, two 0.8 MMBtu/hr natural gas fired shrink wrap units, and one experimental plant drier (0.3 MMBtu/hr), main kiln (1.5 MMBtu/hr) 6" kiln (0.2 MMBtu/hr), one 0.6 MMBtu/hr acid wash kiln, one 0.6 MMBtu/hr acid wash furnace, and one 0.2 MMBtu/hr LPG-fired shrink wrap gun as combustion equipment with a maximum heat input less than 5 MMBtu fired exclusively on PUC natural gas and direct fired process heaters.
- Section 202.D.8 and D.14 for a 3.5 bhp portable striper and other equipment used in maintenance painting activities
- Section 202.O.4 for wood working equipment with attached ventilation systems and sawdust containers
- Section 202.O.3 for various metal grinding, pressing, rolling and drawing equipment
- Section 202.D.3 for mine vehicles, cranes, forklifts and company automobiles as defined in H&SC 42310.
- Section 202.F.1.e for a gasoline fired 16 bhp ICE used to drive a portable air compressor, an 18 bhp propane-fired ICE used to drive a vacuum system, a 9 bhp gasoline-fired ICE used to drive a portable concrete mixer, six 10.5 bhp diesel-fired ICEs used to power mobile quarry flood lights as ICEs rated at less than 20 bhp.
- Section 202.K.6 for barbecues used for on-site functions as H&SC 42310(d) food preparation equipment.
- Section 202.N. as laboratory equipment, fume hoods and 2 baghouses used by the Quality Control and Research lab as lab equipment used exclusively for chemical or physical analyses and bench scale equipment.
- Section 202.L.9 for 7 "blow-off" booths for personal dust removal and the associated baghouse, 14 vacuum systems used to clean dust from the ground, a portable vacuum used to collect spilled material, a filter truck with a vacuum for cleaning dust from vehicle filters, as vacuum cleaning systems used exclusively for industrial, commercial or residential housekeeping purposes.
- Section 202.D.4 for trains used for transportation of freight
- Section 202.F.1.d for one natural gas fired 200 bhp stationary emergency electrical power generator and two diesel-fired 200 bhp stationary emergency electrical power generators as



ICEs used exclusively for emergency electrical power generation that operate no more than 200 hrs/year and for which records of hours of operation per day and per year are maintained and available to the APCD upon request.

- Section 202.V.9.a.a for four 93% sulfuric acid tanks and pumping equipment as tanks used exclusively for storage and dispensing of commercial grades of sulfuric acid.
- Section 202.V.8 for a propane tank as storage of liquefied gases which do not exceed the Gas Processors Association specifications for maximum volatile sulfur content of commercial grade liquefied petroleum gas.
- Section 202.O.1 for a pellet plant extruder used to form wet DE into pellets as a press used exclusively for extruding minerals.
- Section 202.L.5 for a natural gas fired steam cleaner as equipment used exclusively for steam cleaning.
- Section 202.H for abrasive blasting equipment as abrasive blasting equipment. Note that the ICE is not exempt and is permitted herein.
- Section 202.P.11 for fire extinguisher training.

3.1.2 APCD Rule 333 (*Control of Emissions from Reciprocating IC Engines*): Under Section B.1.b, engines exempt per Rule 202 are also exempt from the requirements of this rule. Therefore, those engines listed above under the Rule 202 exemption are not required to comply with Rule 333. Furthermore, diesel-fired ICE 8115 rated at 58 bhp, is exempted per Section 333.B.2 (less than 200 hours per year of operation) from Sections D, E, F and G. ICEs 8700 and 8113 are exempt from the rule since they are rated at 49 bhp per ATC 8822-01.

### **3.2 Compliance with Applicable Federal Rules and Regulations**

3.2.1 40 CFR Parts 51/52 {New Source Review (Non-attainment Area Review and Prevention of Significant Deterioration)}: The Lompoc plant was constructed and permitted prior to the applicability of these regulations. However, all permit modifications as of 1971 are subject to APCD NSR requirements. Compliance with APCD Regulation VIII (*New Source Review*), ensures that future modifications to the facility will comply with these regulations.

3.2.2 40 CFR Part 60 {New Source Performance Standards}: Subpart OOO applies to crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins and enclosed truck or rail car loading stations constructed, reconstructed or modified, as defined by the standard, after August 31, 1983. Several equipment items are subject to NSPS 40 CFR Subpart OOO (Standards of Performance for Nonmetallic Minerals Processing Plants). Some of the units are subject only to the reporting requirements of Subpart OOO. In general, the subpart limits stack emissions to a concentration of 0.0217 gr/dscf and opacity to 7%, fugitives to a choice of limits, and requires initial source tests for gr/dscf and opacity, the use of EPA Reference Test Methods 5 and 9 for PM and opacity, respectively, and the reporting of performance test results. Although Celite has made several replacements that are exempt from the emission limits of the Subpart, the units are usually subject to the reporting requirements. See Section 4.8 for details.

- 3.2.3 40 CFR Part 61 {NESHAP}: Any demolition or renovation affecting asbestos containing materials must meet the requirements of 40 CFR 61 Subpart M (National Emission Standard for Asbestos).
- 3.2.4 40 CFR Part 63 {MACT}: This facility is not currently subject to the provisions of this Subpart. However, compliance will be assessed once an applicable MACT standard is promulgated.
- 3.2.5 40 CFR Part 64 {Compliance Assurance Monitoring}: This rule became effective on April 22, 1998. Compliance with this rule is not required until the next Part 70 permit renewal or significant permit revision.
- 3.2.6 40 CFR Part 70 {Operating Permits}: This Subpart is applicable to the Lompoc plant. Table 3.1 lists the federally-enforceable APCD promulgated rules that are “generic” and apply to the Lompoc plant. Table 3.2 lists the federally-enforceable APCD promulgated rules that are “unit-specific”. These tables are based on data available from the APCD’s administrative files and from Celite’s Part 70 Operating Permit application #9575. Table 3.4 includes the adoption dates of these rules.

### **3.3 Compliance with Applicable State Rules and Regulations**

- 3.3.1 Division 26. Air Resources {California Health & Safety Code}: The administrative provisions of the Health & Safety Code apply to this facility and will be enforced by the APCD. These provisions are APCD-enforceable only.
- 3.3.2 California Administrative Code Title 17: These sections specify the standards by which abrasive blasting activities are governed throughout the State. All abrasive blasting activities at the Lompoc plant are required to conform to these standards. Compliance will be assessed through onsite inspections. These standards are APCD-enforceable only. However, CAC Title 17 does not preempt enforcement of any SIP-approved rule that may be applicable to abrasive blasting activities.
- 3.3.3 AB2588: An estimate of the Hazardous Air Pollutants (HAPs) associated with this facility is included in section 5.4. This is presented for informational purposes only since no federal requirements currently apply for HAPs at this facility.

### **3.4 Compliance with Applicable Local Rules and Regulations**

- 3.4.1 Applicability Tables: Table 3.3 lists the non-federally enforceable APCD promulgated rules that apply to the Lompoc plant. Table 3.4 lists the adoption date of all rules applicable to this permit at the date of this permit’s issuance.
- 3.4.2 Rules Requiring Further Discussion: During application for its Part 70 permit, Celite self-reported the operation of 5 bagging stations without permits. Of these five, four were installed before Celite acquired the facility from the prior owner, Manville Sales Corporation. Celite applied for an Authority to Construct for these stations on January 10, 1997. The APCD issued a final ATC 9696 to Celite for the stations on 12-2-98, and the NOV was resolved on 9-9-98.

The last quarterly facility inspections occurred on 18 December 1997, 17 March 1998, 16 June 1998 and 9 November 1998. On 16 June 1998, an APCD inspector also observed a source test. On 24 and 25 September 1998, the APCD inspected asbestos abatement activities. Except for the 5 packing stations, the inspectors reported that the facility was in compliance with all APCD rules and PTO conditions.

The following is a rule-by-rule evaluation of compliance for the Lompoc plant:

*Rule 301 - Circumvention:* This rule prohibits the concealment of any activity that would otherwise constitute a violation of Division 26 (Air Resources) of the California H&SC and the SBCAPCD rules and regulations. To the best of the APCD's knowledge, Celite is operating in compliance with this rule.

*Rule 302 - Visible Emissions:* This rule prohibits the discharge from any single source any air contaminants for which a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade than a reading of 1 on the Ringlemann Chart or of such opacity to obscure an observer's view to a degree equal to or greater than a reading of 1 on the Ringlemann Chart. Sources subject to this rule include: the CHEAFs, the baghouses, the two boilers and the piston IC engines at the plant. Improperly maintained units have the potential to violate this rule. Compliance will be ensured through the use of work practices, visible emissions monitoring and records.

*Rule 303 - Nuisance:* Rule 303 prohibits any source from discharging air contaminants in such quantities which cause a nuisance to any considerable number of persons. APCD policy requires 5 verifiable complaints in 24 hours from different households or 10 verifiable complaints over a two week period to conclude that a public nuisance condition exists. Since December 1989 the APCD has received 78 citizen complaints regarding emissions from the Celite facility from 10 complainants. 46 of those complaints concerned dust emissions, 30 of the complaints concerned the "burnt match" like odor of oxides of sulfur and 2 involved smoke. Some of the complaints were not verified due to their being received after normal working hours. Since 1989, the APCD has not received sufficient complaints in reference to any one incident to find Celite in violation of Rule 303. Consequently, to date, Celite has been found in compliance with Rule 303.

*Rule 304 - Particulate Matter, Northern Zone:* The Lompoc plant is considered a Northern Zone source. This rule prohibits the discharge to atmosphere, any particulate matter in excess of 0.3 grains per cubic feet of gas at standard conditions. Sources subject to this rule include the CHEAFs, the High Efficiency Venturi, the baghouses, the two boilers and the IC engines at the plant. Improperly maintained units have the potential to violate this rule. Compliance will be ensured through the use of source testing, work practices, an IC Engine Particulate Operation and Maintenance Plan, and visible emissions monitoring and records.

*Rule 306 – Dust and Fumes, Northern Zone:* The Lompoc plant is considered a Northern Zone source. This rule prohibits the discharge to atmosphere from any source particulate matter in excess of specified mass emission rates in pounds per hour. The maximum emission rates are determined as a function of process weight rate, measured in pounds per hour, and are listed in Table 306(a) of the rule. Sources subject to this rule include: the CHEAFs, the High Efficiency Venturi, the baghouses, the two boilers and the IC engines at the plant. Improperly maintained units have the potential to violate this rule. Compliance will be ensured through the use of source testing, work practices, an IC Engine Particulate Operation and Maintenance Plan, and visible emissions monitoring and records.

*Rule 309 - Specific Contaminants:* Under Section "A", no single source may discharge sulfur compounds and combustion contaminants in excess of 0.2 percent as SO<sub>2</sub> (by volume) and

0.3 gr/scf (at 12% CO<sub>2</sub>) respectively. In addition, no source may construct or operate equipment that emits over 200 lb/hr of sulfur compounds or over 140 lb/hr of NO<sub>x</sub>. Equipment subject to this rule include the CHEAFs, the High Efficiency Venturi, the baghouses, the two boilers and the IC engines at the plant. The CHEAFs have the potential to violate all four standards, and the baghouses have the potential to violate the PM standard (see discussion on Rule 304 above for compliance). Compliance will be ensured through the use of source testing, work practices, visible emissions observations and records and the SO<sub>x</sub> Compliance Monitoring Protocol.

*Rule 310 - Odorous Organic Compounds:* This rule prohibits the discharge of H<sub>2</sub>S and organic sulfides that result in a ground level impact beyond the property boundary in excess of either 0.06 ppmv averaged over 3 minutes and 0.03 ppmv averaged over 1 hour. No measured data exists to confirm compliance with this rule. However, since Celite processes primarily involve combustion of elemental sulfur to SO<sub>x</sub>, emissions of odorous organic sulfur compounds are not expected to occur at the plant

*Rule 311 - Sulfur Content of Fuels:* This rule limits the sulfur content of fuels combusted at the Lompoc plant to 0.5 percent (by weight) for liquids fuels and 50 gr/100 scf (calculated as H<sub>2</sub>S) {or 796 ppmvd} for gaseous fuels. Compliance will be verified through documentation from fuel suppliers or periodic analysis.

*Rule 315 – Gasoline Specifications:* This rule prohibits persons from supplying as a motor vehicle fuel gasoline with a degree of unsaturation greater than that indicated by a Bromine number of 30. Celite supplies gasoline for use by its motor vehicles. Use of gasoline meeting retail standards set by the State of California will result in compliance with this rule.

*Rule 316 – Storage and Transfer of Gasoline:* This rule applies to the storage and transfer of gasoline. Sections B, C, G and H apply to Celite gasoline tank. These sections require certain tanks to be equipped with a submerged fill pipe, CARB-certified Phase I and Phase II vapor recovery systems, hold open latches on dispensers, proper maintenance of the vapor recovery system, and the use of specific test methods to determine compliance. Compliance will be verified with APCD inspections and records of CARB certification

*Rule 317 - Organic Solvents:* This rule sets specific prohibitions against the discharge of emissions of both photochemically and non-photochemically reactive organic solvents (40 lb/day and 3,000 lb/day respectively). Solvents may be used at the plant during normal operations for degreasing by wipe cleaning and for use in paints and coatings in maintenance operations. There is the potential to exceed the limits under Section B.2 during significant surface coating activities. Celite will be required to maintain records to ensure compliance with this rule.

*Rule 321 - Solvent Cleaning Operations:* This rule sets equipment and operational standards for degreasers using organic solvents. Celite has stated that their solvent cleaning operations fall under the exemptions of this rule.

*Rule 322 - Metal Surface Coating Thinner and Reducer:* This rule prohibits the use of photochemically reactive solvents for use as thinners or reducers in metal surface coatings. Celite will be required to maintain records during maintenance operations to ensure compliance with this rule.

*Rule 323 - Architectural Coatings:* This rule sets standards for the application of surface coatings. standards for many types of architectural coatings. The primary coating standard that will apply to the plant is for Industrial Maintenance Coatings which has a limit of 340 gram ROC per liter of coating, as applied. Celite is required to comply with the Administrative requirements under Section F.

*Rule 324 - Disposal and Evaporation of Solvents:* This rule prohibits any source from disposing of more than one and a half gallons of any photochemically reactive solvent per day by means that will allow the evaporation of the solvent into the atmosphere. Celite will be required to maintain records to ensure compliance with this rule.

*Rule 326 - Storage of Reactive Organic Liquids:* This rule applies to equipment used to store reactive organic compound liquids with a vapor pressure greater than 0.5 psia. The plant has several tanks of organic liquid, but they are all exempt from this rule. In particular, the fuel oil tanks, propane tank and the remaining tanks are exempt under Sections B.1.b, B.7 and B.1.a, respectively.

*Rule 329 – Cutback and Emulsified Asphalt Paving Materials:* This rule details the applicability and standards for the application of cutback emulsified asphalt paving materials. Celite occasionally uses this material for road and parking lot maintenance.

*Rule 330 - Surface Coating of Metal Parts and Products:* This rule sets standards for the use of surface coatings on metal parts and products. However, all Celite coating operations fall within Rule 323 or Rule 339. Accordingly, no coating operations are expected to be subject to this rule.

*Rule 333 - Control of Emissions from Reciprocating IC Engines:* This rule applies to all engines with a rated brake horsepower of 50 or greater that are fueled by liquid or gaseous fuels. However, per Section B.1.b any engine exempt from the requirement to obtain a permit under Rule 202 is also exempt from this rule (see Section 3.1 above). ICEs 8716 and 8717 at the Lompoc plant are subject to the NO<sub>x</sub> standards under Section D.4 of 8.4 g/bhp-hr or 796 ppmvd (at 15% O<sub>2</sub>). Compliance will be achieved through implementation of the most recently APCD-approved maintenance plan (plan as of this permit issuance was dated June 25, 1993) required under Section E and through biennial source testing.

*Rule 342 - Control of Oxides of Nitrogen from Boilers, Steam Generators and Process Heaters:* This rule sets emission standards for external combustion units with a rated heat input greater than 5.0 MMBtu/hr. The Lompoc plant has 2 boilers with ratings greater than this threshold. Both are equipped with dual fuel burners capable of firing on natural gas or fuel oil. Because Boiler #1 is limited by permit to an annual heat input less than 9 billion Btu, it is exempt from the mass emission limits, but must be tuned annually. Boiler #2 is not limited to 9 billion Btu/year and must meet NO<sub>x</sub> limits of 30 ppmv and 0.036 lb/MMBtu of heat input when fired on natural gas. In addition, Boiler #2 may not exceed carbon monoxide emissions of 400 ppmv. Compliance is ensured by the annual tuning of boiler No. 1 and biennial testing of boiler No. 2. Boiler #2's fuel-oil-fired mode is limited to less than 192 hours per year; this exempts it from the liquid-fuel-fired 40 ppmv and 0.052 lb/MMBtu NO<sub>x</sub> limits.

*Rule 505 - Breakdown Conditions:* This rule describes the procedures that Celite must follow in order to seek regulatory relief when a breakdown condition occurs to any emissions unit associated

with the Lompoc plant. A breakdown condition is defined as an unforeseeable failure or malfunction of (1) any air pollution control equipment or related operating equipment which causes a violation of an emission limitation or restriction prescribed in the APCD Rules and Regulations, or by State law, or (2) any in-stack continuous monitoring equipment, provided such failure or malfunction:

- a. Is not the result of neglect or disregard of any air pollution control law or rule or regulation;
- b. Is not the result of an intentional or negligent act or omission on the part of the owner or operator;
- c. Is not the result of improper maintenance;
- d. Does not constitute a nuisance as defined in Section 41700 of the Health and Safety Code;
- e. Is not a recurrent breakdown of the same equipment.

*Rule 603 - Emergency Episode Plans:* Section "A" of this rule requires the submittal of *Stationary Source Curtailment Plan* for all stationary sources that can be expected to emit more than 100 tons per year of hydrocarbons, nitrogen oxides, carbon monoxide or particulate matter. This permit requires Celite to submit such a plan within 180 days of issuance of this permit.

### **3.5 Compliance History**

This section contains a summary of the compliance history for this facility and was obtained from documentation contained in the APCD's Administrative file.

#### **3.5.1 Variances:** Two variances were granted to Celite since 1990.

*Case 30-92-E:* This was an emergency variance from PTO 5840 granted on 12/23/92 for a CHEAF breakdown. The variance was effective until 2/2/93, on which date compliance with the PTO 5840 was verified via letter.

*Case 3-93:* This was a 90 day variance from PTO 5840 granted on 2/3/93 for the #3 CHEAF. The variance was effective until 5/3/93.

#### **3.5.2 Violations:** Six Notice of Violations (NOVs) and no Administrative Infractions (AI Doc) were issued since the permit for the entire facility (PTO 5840) was last issued in 1990.

*NOV No. 4636:* Violation of Rule 201. Issued 2/14/94. Resolved Date: 2-14-94 (ATC applied for and deemed complete before the NOV was issued.

*NOV No. 4825:* Violation of Rule 201. Issued 1/5/95. Celite replaced an existing kiln burner and operated it without a permit. Resolved 8/15/97.

*NOV No. 5625:* Violation of Rule 206. Issued 3/24/97. ICE 8115 exceeded 200 hours of operation during the year. Settlement derived 3/27/97. Resolved 4/15/99.

*NOV No. 5814:* Violation of Rule 201. Issued 9/24/97. Specifically, five packing stations were installed between 1989 and 1994 and operated without an ATC and PTO permit. Resolved Date: Resolved with issuance of ATC 9696-01 on 12-2-98.

*NOV No. 5819:* Violation of Rule 206. Issued 6/10/98. Celite failed to notify the APCD, within the specified time frames, of running a process rate in excess of 110 percent of the source tested rates. Celite also failed also to perform a source test at the higher rate within 3 months of same. In particular, Celite exceeded the specified rate in Nov and Dec of 1997 and March of 1998. Celite ran at rates that exceeded the source test rate by more than 11% in May, November and December 1997 and in January and March 1998. Resolved 8/5/98. (Subsequent source testing indicated emission limitation compliance at these higher production rates.)

*NOV No. 6177:* Violation of Rule 201. Issued 12/9/98. Celite failed to comply with a condition in PTO 9192 limiting stack flow of the CRVBH baghouse to 34,000 dscfm, however there was no exceedance of emission limits. This was discovered during a source test. Celite applied for a combined ATC/PTO modification to raise the flow to 35,700 dscfm. This was resolved with the submittal of an ATC/PTO application.

3.5.3 Significant Historical Hearing Board Actions: The last time that the permit for the main facility (PTO 5840) was reevaluated was in 1989. This was the initial facility-wide comprehensive permit created for this facility. It was issued on 6-27-1989. On 7-7-1989, the prior owner, Manville Sales Corporation, appealed the permit to the APCD Hearing Board. The major objections stated by Manville on the permit were:

- source testing methods, frequency, plan and reporting requirements
- continuous parameter monitoring requirements for baghouses & CHEAFs
- regulation of mining operations,
- emission limits based on assumptions other than prohibitory rule emission standards
- monitoring, recordkeeping, and reporting requirements

The APCD filed a response to the petition on 11-2-1989. Negotiations commenced and the hearing was continued. The APCD and Manville thereafter negotiated changes to the permit which were approved by the APCD Hearing Board. These included:

- limit “data, specifications and documented assumptions” to what is in the Engineering Evaluation,
- emission limits based on the applicable limits in Rules 306 and 309,
- delete the parameter monitoring requirements (baghouses & CHEAFs),
- delete the requirements to shutdown quarry operations during wind over 30 mph,
- grant the full Rule 309 limit for each equipment item rather than each stack,
- change information in the Equipment Description and delete proprietary information,
- delete discussion regarding nuisance in Engineering Evaluation, and
- revise the NEI table.

As a result, the permit was reissued on 4-4-1990 with the changes listed above.

**Table 3.1 - Generic Federally-Enforceable APCD Rules**

<b>Generic Requirements</b>	<b>Affected Emission Units</b>	<b>Basis for Applicability</b>
<u>RULE 101</u> : Compliance by Existing Installations	All emission units	Emission of pollutants
<u>RULE 102</u> : Definitions	All emission units	Emission of pollutants
<u>RULE 103</u> : Severability	All emission units	Emission of pollutants
<u>RULE 201</u> : Permits Required	All emission units	Emission of pollutants
<u>RULE 202</u> : Exemptions to Rule 201	Applicable emission units, as listed in form 1302-H of the Part 70 application	Insignificant activities/emissions, per size/rating/function
<u>RULE 203</u> : Transfer	All emission units	Change of ownership
<u>RULE 204</u> : Applications	All emission units	Addition of new equipment of modification to existing equipment.
<u>RULE 205</u> : Standards for Granting Permits	All emission units	Emission of pollutants
<u>RULE 206</u> : Conditional Approval of Authority to Construct or Permit to Operate	All emission units	Applicability of relevant Rules
<u>RULE 207</u> : Denial of Applications	All emission units	Applicability of relevant Rules
<u>RULE 208</u> : Action on Applications – Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment of modification to existing equipment.
<u>RULE 212</u> : Emission Statements	All emission units	Administrative
<u>RULE 301</u> : Circumvention	All emission units	Any pollutant emission
<u>RULE 302</u> : Visible Emissions	All emission units	Particulate matter emissions
<u>RULE 303</u> : Nuisance	All emission units	Emissions that can injure, damage or offend.
<u>RULE 304</u> : PM Concentration – North Zone	Each PM source	Emission of PM in effluent gas
<u>RULE 306</u> : Dust and Fumes – North Zone	All emission units	Emission of particulate matter
<u>RULE 309</u> : Specific Contaminants	All emission units	Combustion contaminants



<b>Generic Requirements</b>	<b>Affected Emission Units</b>	<b>Basis for Applicability</b>
<u>RULE 310</u> : Odorous Org. Sulfides	All emission units	Emission of organic sulfides
<u>RULE 311</u> : Sulfur Content of Fuel	All combustion units	Use of fuel containing sulfur
<u>RULE 317</u> : Organic Solvents	Emission units using solvents	Solvent used in process operations.
<u>RULE 321</u> : Solvent Cleaning Operations	Emission units using solvents	Solvent used in process operations.
<u>RULE 322</u> : Metal Surface Coating Thinner and Reducer	Emission units using solvents	Solvent used in process operations.
<u>RULE 323</u> : Architectural Coatings	Paints used in maintenance and surface coating activities	Application of architectural coatings.
<u>RULE 324</u> : Disposal and Evaporation of Solvents	Emission units using solvents	Solvent used in process operations.
<u>RULE 505.A, B1, D</u> : Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
<u>RULE 603</u> : Emergency Episode Plans	Stationary sources with PTE greater than 100 tpy	Celite Lompoc Plant is a major source.
<u>REGULATION VIII</u> : New Source Review	All emission units	Addition of new equipment of modification to existing equipment. Applications to generate ERC Certificates.
<u>REGULATION XIII (RULES 1301-1305)</u> : Part 70 Operating Permits	All emission units	Celite Lompoc plant is a major source.

**Table 3.2 - Unit-Specific Federally-Enforceable APCD Rules**

<b>Unit-Specific Requirements</b>	<b>Affected Emission Units</b>	<b>Basis for Applicability</b>
<u>RULE 315</u> : Gasoline Specifications	Gasoline tank #5-1	Supplying gasoline for use within Santa Barbara County
<u>RULE 316</u> : Storage and Transfer of Gasoline	Gasoline tank #5-1	Storage and transfer of gasoline on site
<u>RULE 326</u> : Storage of Reactive Organic Liquids	Fuel oil tanks, waste oil tanks, propane tank (exempt)	Use of tanks containing reactive organic liquids
<u>RULE 329</u> : Cutback Asphalt Paving Materials	Paving operations using cutback asphalt	Use of cutback asphalt for paving
<u>RULE 333</u> : Control of Emissions from Reciprocating IC Engines	Piston IC engines only; ID #s 1-15 and 1-16	Use of IC engines exceeding 50 bhp rating.
<u>RULE 342</u> : Control of Oxides of Nitrogen from Boilers, Steam Generators and Process Heaters	Boilers #1 and #2; ID #s 2-1 and 2-2	Use of boilers with rated heat inputs exceeding 5 MMBtu/hr

**Table 3.3 - Non-Federally-Enforceable APCD Rules**

<b>Requirement</b>	<b>Affected Emission Units</b>	<b>Basis for Applicability</b>
<u>RULE 210</u> : Fees	All emission units	Administrative
<u>RULES 501-504</u> : Variance Rules	All emission units	Administrative
<u>RULE 505.B2, B3, C, E, F, G</u> : Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
<u>RULES 506-519</u> : Variance Rules	All emission units	Administrative

**Table 3.4 – Adoption Dates of APCD Rules Applicable at Issuance of Permit**

<b>Rule No.</b>	<b>Rule Name</b>	<b>Adoption Date</b>
Rule 101	Compliance by Existing Installations: Conflicts	June 1981
Rule 102	Definitions	April 17, 1997
Rule 103	Severability	October 23, 1978
Rule 201	Permits Required	April 17, 1997
Rule 202	Exemptions to Rule 201	April 17, 1997
Rule 203	Transfer	April 17, 1997
Rule 204	Applications	April 17, 1997
Rule 205	Standards for Granting Permits	April 17, 1997
Rule 206	Conditional Approval of Authority to Construct or Permit to Operate	October 15, 1991
Rule 208	Action on Applications - Time Limits	April 17, 1997
Rule 212	Emission Statements	October 20, 1992
Rule 301	Circumvention	October 23, 1978
Rule 302	Visible Emissions	June 1981
Rule 303	Nuisance	October 23, 1978
Rule 304	Particulate Matter Concentration - Northern Zone	August, 1989
Rule 306	Dust and Fumes - Northern Zone	August, 1989
Rule 309	Specific Contaminants	October 23, 1978
Rule 310	Odorous Organic Sulfides	October 23, 1978
Rule 311	Sulfur Content of Fuels	October 23, 1978
Rule 315	Gasoline Specifications	October 18, 1971
Rule 316	Storage and Transfer of Gasoline	October 18, 1971
Rule 317	Organic Solvents	October 23, 1978
Rule 321	Solvent Cleaning Operations	September 18, 1997
Rule 322	Metal Surface Coating Thinner and Reducer	October 23, 1978
Rule 323	Architectural Coatings	July 18, 1996
Rule 324	Disposal and Evaporation of Solvents	October 23, 1978
Rule 326	Storage of Reactive Organic Liquids	December 14, 1993
Rule 329	Cutback Asphalt Paving Materials	June 11, 1979

Rule 333	Control of Emissions from Reciprocating IC Engines	April 17, 1997
Rule 342	Control of Oxides of Nitrogen (NOx) from Boilers, Steam Generators and Process Heaters	April 17, 1997
Rule 505	Breakdown Conditions (Section A, B1 and D)	October 23, 1978
Rule 603	Emergency Episode Plans	June 15, 1981
Rule 801	New Source Review	April 17, 1997
Rule 802	Non-attainment Review	April 17, 1997
Rule 803	Prevention of Significant Deterioration	April 17, 1997
Rule 804	Emission Offsets	April 17, 1997
Rule 805	Air Quality Impact and Modeling	April 17, 1997
Rule 806	Emission Reduction Credits	April 17, 1997
Rule 901	New Source Performance Standards (NSPS)	May 16, 1996
Rule 903	Outer Continental Shelf (OCS) Regulations	November 10, 1992
Rule 1001	National Emission Standards for Hazardous Air Pollutants (NESHAPS)	October 23, 1993
Rule 1301	General Information	September 18, 1997
Rule 1302	Permit Application	November 9, 1993
Rule 1303	Permits	November 9, 1993
Rule 1304	Issuance, Renewal, Modification and Reopening	November 9, 1993
Rule 1305	Enforcement	November 9, 1993

## 4.0 Engineering Analysis

### 4.1 General

The engineering analyses performed for this permit were limited to the review of:

- ☞ facility process flow diagrams
- ☞ emission factors and calculation methods for each emissions unit
- ☞ emission control equipment (including RACT, BACT, NSPS, NESHAP, MACT)
- ☞ emission source testing, sampling, CEMS, CAM
- ☞ process monitors needed to ensure compliance

Unless noted otherwise, default ROC/THC reactivity profiles from the APCD's document titled "*VOC/ROC Emission Factors and Reactivities for Common Source Types*" dated 7/13/98 (ver 1.1) was used to determine non-methane, non-ethane fraction of THC.

### 4.2 Combustion Sources

The combustion sources associated with the Lompoc plant consist of piston IC engines and external combustion units subject to permit such as boilers, process heaters, and kilns. Primary power to the plant is currently supplied by Pacific Gas and Electric (PG&E). Natural gas is also currently supplied by PG&E.

- 4.2.1 Piston IC Engines: All permitted plant IC engines are liquid-fuel fired. ICEs 8716 and 8717 are diesel-fired and subject to permit and Rule 333 requirements. The other IC engine at the plant rated over 50-bhp is ICE 8115, which is limited to 199 hours of operation per year. All other stationary IC engines at the plant subject to permit are rated less than 50-bhp. Of these, 8113 and 8700 are equipped with RPM-limiting governors and permitted to operate only 2080 hours per year. The calculation methodology is similar for all IC engines:

$$E_1 = (E) (H_1)$$

$$E_2 = (E) (H_2)$$

Where:  $E_1$  = lbs/hr

$E_2$  = tons/yr

$H_1$  = Maximum rated heat input per hr (Bhp\*BSFC)

$H_2$  = Maximum rated heat input per yr (Bhp\*BSFC)

E = Emission Factor

HHV = higher heating value (140,000 Btu/gal diesel; 125,000 Btu/gal gasoline)

$S_w$  = weight percent sulfur content (0.5 diesel, 0.03 gasoline)

BSFC = brake specific fuel consumption (btu/Bhp-hr)

$D_f$  = fuel density = 7.4 lb/gal for diesel; 6.5 lb/gal for gasoline

Rr = ROC/TOC ratio (diesel) = 0.877; for Gasoline Rr = 0.968

Pr = PM10/TSP ratio = 0.960

Emission Factors (lb/MMBtu) (8115, 8716, 8717):

$$\begin{aligned}
 \text{NO}_x &= 8.4\text{g/Bhp-hr} / (\text{BSFC}) * 10^6 / 454 \text{ (for ICEs 8716, 8717)} \\
 \text{NO}_x &= 469 \text{ lb/kgal} / \text{HHV} / 1000 \text{ (for ICE 8115)} \\
 \text{ROC} &= 37.5 \text{ lb/kgal} / \text{HHV} / 1000 * \text{Rr} \\
 \text{CO} &= 102 \text{ lb/kgal} / \text{HHV} / 1000 \\
 \text{PM} &= 33.5 \text{ lb/gal} / \text{HHV} / 1000 \\
 \text{SO}_x &= 20,000 / \text{HHV} * \text{D}_f * (\text{S}_w) / 100
 \end{aligned}$$

Emission Factors (lb/MMBtu) (8113, 8700):

$$\begin{aligned}
 \text{NO}_x &= 102 \text{ lb/gal} / \text{HHV} * 1000 \\
 \text{ROC} &= 132 \text{ lb/kgal} / \text{HHV} * 1000 * \text{Rr} \\
 \text{CO} &= 3940 \text{ lb/kgal} / \text{HHV} * 1000 \\
 \text{PM} &= 6.47 \text{ lb/gal} / \text{HHV} * 1000 \\
 \text{SO}_x &= 20,000 / \text{HHV} * \text{D}_f * (\text{S}_w)
 \end{aligned}$$

**Table 4.2.1. Emission Basis for ICEs**

					(Values in lb/MMBtu unless other units indicated)				
APCD IDs	Celite IDs	Fuel	Control	Bhp, BSFC, hrs/yr MMBtu/hr MMBtu/yr	NOx	SOx	ROC	CO	PM
1-1 & 1-2	8113 <sup>1</sup> & 8700 <sup>1</sup>	gasoline	None [governor]	49 11000 2080	0.816	0.03%	1.02 <sup>2</sup>	31.5	0.05
1-3 thru 1-12	8771, 8776, 8778, 8780, 8786, 8795, 8797, 8706, 8700-1, 8700-2	gasoline	None	<50 11000 8760	140 lb/hr (Rule 309.E.3)	0.5% (Rule 311.C)	n/a	n/a	n/a
1-13	8102	Diesel	None	44 7500 8760	140 lb/hr (Rule 309.E.3)	0.5% (Rule 311.C)	n/a	n/a	n/a
1-14 <sup>3</sup>	8115	Diesel	None	58 7500 199 0.44 87	3.35 <sup>2</sup>	0.5% (Rule 311.C)	0.235 <sup>3</sup>	0.729 <sup>3</sup>	0.23 <sup>3</sup>
1-15 <sup>3</sup> & 1-16 <sup>3</sup>	8716 & 8717	Diesel	Fuel injection timing retard	80 7500 2080 0.60 1248	2.46	0.5% (Rule 311.C)	0.235 <sup>3</sup>	0.729 <sup>3</sup>	0.23 <sup>3</sup>

<sup>1</sup> EFs from ATC 8822 PC 8 for SOx limit of 0.03% S content, and Eng Eval pg 4 for remainder of pollutants.

<sup>2</sup> An emission rate of 0.55lb/hr results from using the 1.02lb/MMBtu emission factor. Fuel tank evaporative emissions (0.1326lb/hr) and engine crankcase emissions (0.084 lb/hr) are then added to this rate to get total ROC emissions.

<sup>3</sup> EFs from ATCs 8822-01 and 8945-01 based on AP-42

n/a = not applicable. Note, there are no federal or APCD emission limits for these pollutants.



4.2.2 External Combustion Units: There are numerous external combustion units operated by Celite at the Lompoc plant. They include boilers, dryers, process heaters, and kilns. Details on the source of the emission factors for each is given below. For all of the external combustion units, the calculation methodology is based on the lb/MMBtu emission factors multiplied by the maximum permitted heat throughput or rule limits. Federably enforceable emission limits listed in Table 9.C are based on the *italicized* emission factors. The non-italicized factors are the basis of the APCD emission limits listed in table 9.D.

**Table 4.2.2 External Combustion Unit Emission Basis**

APCD Ids	Celite IDs	Fuel	Control	MMBtu/hr, MMBtu/yr	Values in lb/MMBtu unless other units indicated				
					NOx	SOx	ROC	CO	PM
2-1	Boiler #1 Comb. Eng.	PUC gas	None	15.5 9000	<i>140 lb/hr<sup>1</sup></i> 0.098 <sup>3</sup>	<i>0.0137<sup>4</sup></i>	0.0054 <sup>3</sup>	0.0824 <sup>3</sup>	0.0075 <sup>3</sup>
		#6 oil	None	15.5 2976	<i>140 lb/hr<sup>1</sup></i> 0.143 <sup>3</sup>	<i>0.53<sup>2</sup></i>	0.0014 <sup>3</sup>	0.034 <sup>3</sup>	0.0071 <sup>3</sup>
2-2	Boiler #2 Nebraska	PUC gas	Low-NOx burner	23 195,960	<i>0.036<sup>4</sup></i>	<i>0.0137<sup>4</sup></i>	<i>0.0034<sup>4</sup></i>	<i>0.297<sup>4</sup></i>	<i>0.014<sup>4</sup></i> 0.0075 <sup>3</sup>
		#6 oil	Allowed only during gas curtailmt	23 4416	<i>0.8<sup>4</sup></i> 0.1433 <sup>3</sup>	<i>0.53<sup>4</sup></i>	<i>0.002<sup>4</sup></i> 0.0014 <sup>3</sup>	<i>0.034<sup>4</sup></i>	<i>0.087<sup>4</sup></i> 0.0071 <sup>3</sup>
2-3 & 2-4	Silicates conveyor & flash dryers	PUC gas	SPFD baghouse	Σ= 73.8	<i>140 lb/hr<sup>1</sup></i>	<i>0.128<sup>2</sup></i>	No Limit	No limit	For flash dryer, see BH
2-5	Fuel oil heater	gas	None	2.5	<i>140 lb/hr<sup>1</sup></i>	<i>0.128<sup>2</sup></i>	No Limit	No limit	No limit
		diesel	None	2.5	<i>140 lb/hr<sup>1</sup></i>	<i>0.53<sup>2</sup></i>	No Limit	No limit	No limit
2-7 thru 2-16	Kilns & Furnaces of Lines 3, 5, 6, 7 and 11	PUC gas	PM only: CHEAFs, except 5HEV for 5 System	Σ= 470	<i>140 lb/hr<sup>1</sup></i> 0.55 <sup>3</sup>	<i>200 lb/hr each<sup>1</sup></i>	0.379 <sup>6</sup>	0.421 <sup>7</sup>	<i>40 lb/hr<sup>8</sup></i>
		#6 oil	PM only: CHEAFs, except 5HEV for 5 System	Σ= 465	<i>140 lb/hr<sup>1</sup></i> 0.85 <sup>3</sup>	<i>200 lb/hr each<sup>1</sup></i>	0.379 <sup>6</sup>	3.18 <sup>7</sup>	<i>40 lb/hr<sup>8</sup></i>

<sup>1</sup> From 309.E limit.

<sup>2</sup> NG Limits based on mass balance from Rule 311.C limit of 797 ppmv (0.128 lb/MMBtu). Fuel oil limits based on 0.5% 0.53lb/MMBtu) fuel oil S content limits of Rule 311 (APCD PGD, pg 8)

<sup>3</sup> Updated using emission factors from pages 5 & 8 of the APCD PGD for Boilers, Process Heaters and Steam Generators revised 13 July 98, uncontrolled external combustion units between 0.3 and 100 MMBtu/hr from USEPA AP-42, 5<sup>th</sup> Ed, Supp D (3/98), Chp 1.4, Tables 1.4-1 and 1.4-2). The ROC factor has already been adjusted by 0.5 for gas and 0.79 for oil to



take into account the ROC fraction of TOC. The same is true for the PM10 factor, which has been adjusted by the PM10:PM ratio of 1.0 from AP-42 Chapter 1.4 Table 1.4-2, Supplement D. The limits calculated from these factors are in Table 9.D.

4 Emission factors from ATC 9240-02.

<sup>5</sup> NOx from PTO 9357 for 3, 5 & 6 Systems, from PTO 9353 for 7 System, are based on the 4 April 1989 and 11 January 1977 source tests of the #6 CHEAF (highest tested CHEAF or venturi) with a 5% buffer added.

<sup>6</sup> ROC from PTO 9357 for 3, 5 & 6 Systems, from PTO 9353 for 7 System, are based on the 4 April 1989 source test of the #6 CHEAF (highest tested CHEAF or venturi) with a 5% buffer added.

<sup>7</sup> CO from PTO 9357 for 3, 5 & 6 Systems, from PTO 9353 for 7 System, are based on the January 1996 and 11 January 1977 source tests of the #3 CHEAF (highest tested CHEAF or venturi) with a 5% buffer added.

8. From Rule 306.

4.2.2.1 *Boiler #1 (APCD ID # 2.1)*: This is an uncontrolled 15.5 MMBtu/hr Combustion Engineering Model VP unit permitted to burn both natural gas and fuel oil #6. It is restricted by permit to burn oil no more than 192 hours per year. In addition, it is limited to 9 billion Btu/year of heat input.

4.2.2.2 *Boiler #2 (APCD ID # 2.2)*: This is a 23 MMBtu/hr Nebraska Model NS-B-32-Economizer unit equipped with a low-NOx burner. It is permitted to burn both gas and fuel oil #6. The low NOx burner allows this boiler to comply with the Rule 342.D.1 NO<sub>x</sub> concentration limit of 30 ppmv and emission rate of 0.036 MMBtu/hr. Note that the oil-fired mode is exempt from Rule 342 emission limits because Celite (then Celite Corporation) accepted an ATC condition limiting operation on oil to periods of natural gas curtailment or testing. (Rule 342.B.2).

4.2.2.3 *Miscellaneous Heaters (APCD ID #'s 2-3 through 2-5)*: Celite operates 2 process heaters fired only on PUC natural gas, the SPCD Silicates Conveyor Dryer and the Silicates Flash Dryer. Heat input ratings are 56.3 and 17.5 MMBtu, respectively. Although typically fired on PUC-quality gas, there is no federal requirement limiting Celite to this fuel. Celite may burn fuel with sulfur content as high as 797 ppmv, hence the 0.137 MMBtu emission factor in the chart above. In addition, Celite operates a 2.5 MMBtu/hr fuel oil heater (APCD ID# 2-5) that can be fired on diesel or natural gas. All three units are uncontrolled for NOx. There are federally enforceable mass emission rate limits for NOx and SOx. There are no APCD-only enforceable limits on these units. Accordingly, there are no mass emission limits at all for ROC, CO and PM.

4.2.2.4 *Kilns and Furnaces of Lines 3, 5, 6, 7 & 11: (APCD IDs # 2.7 through 2-16)*: Lines 3, 5, 6 and 7 contain a furnace and kiln each. Line 11 contains two furnaces. All are rated between 40 and 56 MMBtu/hr, and all are permitted to burn both natural gas and residual #6 fuel oil. The particulate matter from lines 3, 6, 7, and 11 kilns and furnaces are controlled by Cleanable High Efficiency Filters (CHEAFs) and, for Line 5, by a High Efficiency Venturi (HEV) Scrubber. The other pollutants, however, are not controlled. These units are exempt from Rule 342 because the products of combustion contact material being processed. SOx emissions are influenced more by sulfur in the ore than by sulfur in the fuel. Similarly, PM and PM10 emissions are composed more of ore particles than combustion particles.

*Federally Enforceable Limits*: In the past, the APCD has recognized SOx limits of 200 lb/hr for each furnace and kiln of each line. Accordingly, each CHEAF and venturi that treat a line containing a furnace and a kiln or the two furnaces that treat line 11, have a federally enforceable limit of 400 lb/hr SOx. The PM mass emission rate from Rule 306 is based on the wet feed rate of ore to the Line. The emission limits for ROC, CO and PM do not have federally enforceable origins. Therefore, these units do not have federally enforceable ROC or CO limits.

*APCD-Enforceable Limits:* The APCD may set ROC and CO emission limits. The emission limits in Table 9.D are from PTO 9367 for Lines 3, 5 and 6 and from PTO 9353 for Line 7. These limits from these emission factors apply only if the Line feed rate exceeds the maximum design feed rate listed for it in Condition 9.D.4.a.

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### **4.3 Baghouse Sources**

Emissions of particulate matter from the handling of DE throughout its processing are controlled by baghouses, rotoclones, Cleanable High Efficiency Air Filters (CHEAFs) and a High Efficiency Venturi (HEV) Scrubber. The CHEAFs and a Venturi Scrubber control dust from the main production lines and are covered under Section 4.2.2.4 above relating to the furnaces and kilns. Baghouse emission factors are based on manufacturers' performance estimates for units covered by an APCD Authority to Construct permit, on the federal limit of 0.0217 gr/dscf for units subject to NSPS Subpart OOO emission limits and not limited in an ATC, on source tests for some units, and on the 0.3 gr/dscf limit of Rule 304 for the rest.

Regardless of the source of the emission factor, the calculation methodology for baghouses is:

$$ER = EF * F * 60 \text{ min/hr} * HPP \div 7000 \text{ gr/lb}$$

where:    ER =    emission rate (lb/period)  
              EF =    emission factor (gr/dscf)  
              F =    flow rate in dscfm  
              HPP =   operating hours per time period (hrs/period)

### **4.4 Rotoclones**

Celite operates 2 rotoclones, both American Air Filter Model 20W. The federally enforceable limits are based on the 0.3 gr/dscf limit for PM and the same calculation method as in Section 4.3 above. There are no federally enforceable limits on ROC for these units.

### **4.5 Refueling Operations**

The Lompoc plant has four fuel storage tanks, one each of gasoline, propane, diesel and fuel oil #6. The gasoline tank is a Glassteel UGST, Model 16D.W underground unit manufactured by Modern Welding Company. It has a 10,000 gallon capacity. The tank is of UL Type III construction and double-walled steel with a fiberglass reinforced plastic outer covering. The tank is equipped with a submerged fill line, an OPW two-point Phase I vapor recovery system and an Emco Wheaton Balance Phase II vapor recovery system.

The diesel storage tank serves the various IC engines at the plant. The diesel, fuel oil and propane storage tanks are exempt from permit because diesel and fuel oil have API gravities under 40 degrees (Rule 202.V.2), and because the propane complies with Gas Processors Association specifications (Rule 202.V.8).

Calculations for the gasoline tank are performed using the methods presented by the California Air Resources Board and emission factors from Appendix A of CAPCOA's Gasoline Station Risk Assessment Guidelines (29 December 1997).

The following calculates emissions from operation of the gasoline station and includes tank loading, breathing, refueling and spillage and represent the APCD emission limits:

$$ER_{yr} = (EF * Q_{yr}) / (2000 \text{ lb/ton} * 1000 \text{ gal})$$

$$Er_{day} = ER_{yr} * 2000 / 365$$

where  $ER_{yr}$  = emission rate in tons per year  
 $ER_{day}$  = emission rate in pounds per day  
 $EF$  = emission factor of 1.68 lb/1000 gal (Phase I & II UST without vent valve)  
 $Q_{yr}$  = throughput in gallons per year = 120,000; 8800 gal/hr

For the gasoline station operation, the federal emission limits are calculated as follows:

Total annual emissions = tank fuel loading + tank breathing + vehicle fueling + spillage;

where: lb/1,000 gal ROC EFs for each are: 0.475, 0.100, 0.700 and 0.450, respectively,

and annual fuel throughput is 120,000 gal/yr.

Total daily emissions are based on the same equation however the tank breathing, vehicle fueling and spillage EFs are multiplied by 0.125 and 0.0329; (1/8 hrs/day and 1/30.42 day/mo).

## 4.6 Fugitive Dust Sources

There are no federally enforceable or APCD mass emission limits that regulate fugitive dust. However, a description of these emissions and of the method for quantifying their potential to emit is provided below. These provisions are not subject to permit condition 9.D.16 (Consistency with Analysis).

- 4.6.1 Fugitive Dust from Mining: Celite maintains ore in storage piles (“glory holes”) that feed the crude DE ore into the Lompoc plant. Ore is moved by bulldozers and carried to piles. Ore is then moved from piles to the glory holes for feeding into the production process. These load-in and load-out activities disturb ore and roadway dust into the air. The potential to emit of the storage pile activities is estimated as follows:

$$ER \text{ in lb/hour} = A * EF \text{ for active and inactive piles}$$

where:  $ER$  = emission rate (lb/period)  
 $EF$  = PM emission factor (lbs/acre/hr)  
 $A$  = maximum total pile area in acres  
 $T$  = active pile schedule (hrs/year)

Using the methodology at USEPA 42, 4<sup>th</sup> Edition, Table 8.19.1-1 (9/85), EF has two values depending upon whether the storage pile is active or inactive. For active piles, EF = 1.65 lbs/acre/hr for PM and 0.79 lbs/acre/hr for PM<sub>10</sub>. For inactive piles, EF = 0.22 for PM and 0.11 for PM<sub>10</sub>. Piles are active 2920 hours per year and inactive 5840 hours per year. As provided in a



most up-to-date factor available, will be used to estimate emissions of PM and PM<sub>10</sub> when needed for compliance evaluations. A PM/PM<sub>10</sub> ratio of 1.0 is assumed.

#### **4.8 BACT/NSPS/NESHAP/MACT**

**BACT:** The emission units at the Lompoc plant covered by PTO 8202 are subject to Best Available Control Technology (BACT). This is the Line 3 automatic bag packing operation comprised of the Packer Station 545 East, Packer Station 545 West, Packer Station 560, and Packer Station 281 Bagwash, and the 3 Automatic Packing Station Baghouse (345BH) that serves the 4 packer station spillage hoppers, the bag cleaning unit, the packer bin cyclones, the packer bin vents and the bag transfer ventilation. BACT for this equipment is the 345BH achieving a performance of 0.002 gr/dscf for PM<sub>10</sub> and 0.007 gr/dscf for PM as listed in Table 4.8.

**MACT:** MACT provisions applicable to this facility have not been promulgated.

**NSPS Subpart OOO:** Standards of Performance for Nonmetallic Mineral Processing Plants, (40 CFR 60.670 *et seq*) applies to several emission units at the Celite Lompoc Plant. Subpart OOO applies to crushers, powder mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins and enclosed truck or rail car loading stations constructed, reconstructed or modified after August 31, 1983. See Section 3.2.2 for a summary of the requirements. Subpart OOO applies to the following equipment:

- Line 3 automatic bag packing operation: Packer Station 545 East, Packer Station 545 West, Packer Station 560, Packer Station 281, Bagwash, and the 3 Automatic Packing Station Baghouse (345BH) (PTO 8202)
- 6P semibulk packing station and the 5 auto packing station baghouse (BH578 also known as 5APVBH) (PTO 9616)
- Powder mill 3AS and 5AS lines consisting of the 3AS and 5AS feed bins, 3AS and 5AS coarse pumps, air sifters #101 through #104, AS blowers #101 through #104, cyclones #101 through #104, the 3AS and 5AS baghouses (3ASBH & 5ASBH), and the following shared by the 2 lines: the AS packing station pump, the two 3&5AS packers, coarse screw and AS screw. (replacement) (PTO 9551)
- AP#5 and #6 packing lines controlled by baghouses 516VBH and 616VBH
- Ventilation system of the #3 and #4 bulk bins and the 3BBVBH and 4BBVBH baghouses. (PTO 9193)

**NSPS Subpart UUU:** (Standards of Performance for New Stationary Sources: Calciners and Dryers in Mineral Industries, (40 CFR 60.730 *et seq*) does not yet apply to emission units at the Celite Lompoc Plant. This subpart applies to certain types of calciners and dryers constructed, reconstructed or modified after August 23, 1986. The calciner is the subject of existing Authority to Construct 9757.

**NESHAPS Subpart T:** (National Emission Standards for Halogenated Solvent Cleaning) (40 CFR 63.460 *et seq*) applies to solvent cleaning machines at the Celite Lompoc Plant that use any of the following: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1 trichloroethane, carbon tetrachloride, or chloroform. Based on the application for this Part 70 permit, however, these substances are not currently used at the Lompoc plant. Accordingly, NESHAP Subpart T does not apply to this source at this time.

## 4.9 Emissions Monitoring/Process Monitoring/CAM

### 4.9.1 Emissions Monitoring

As discussed in section 4.2.2.4 the CHEAF's refer to Cleanable High Efficiency Filters used to control particulate matter from the kilns and furnaces associated with processing lines #3, #6, #7, and #11. The CHEAF's are also the major points of release of SOx emissions generated from combustion of sulfur contained in the feed material (crude ore). The CHEAF's have a federally enforceable mass emission rate limit of 400 pounds per hour (lbs/hr) of SOx emissions. Processing line #5, controlled by a Venturi scrubber, is also major release point of SOx emissions with similar emission limits. The magnitude of the SOx emissions from each processing line is a function of the percent sulfur and feed rates of the crude ore.

Celite is required to monitor compliance with SOx emission limits on an hourly basis in accordance with the *Sulfur Dioxide Compliance Monitoring Protocol*. The Protocol describes the procedures for measurement of the crude ore sulfur content, crude ore blend rates, and inlet crude mass feed rates (weight of ore per unit time) to estimate SOx emissions exiting the CHEAFs and scrubber. The calculation to estimate outlet SOx emission rates from inlet feed characteristics is a "mass balance" based calculation.

Subsequent to issuance of the draft Part 70 permit, the SOx Monitoring Protocol (proposed by Celite as an alternative to CEMs) was subjected to a rigorous technical evaluation to determine whether it would be a reliable tool for assuring compliance with the applicable SOx mass emission limits. The first phase of the evaluation consisted of hourly inlet SOx sampling/analysis over a 24-hour period on two separate processing systems/lines (with different feed sulfur content) to determine whether there was any significant variation in feed percent sulfur concentrations hour-to-hour. The results showed minimal variation hour-to-hour, indicating that a daily frequency of sulfur monitoring would suffice for estimating hourly emissions. The second phase consisted of simultaneous inlet sulfur sampling and stack testing for SOx mass emissions (lb/hour) to determine how SOx lb/hr emissions calculated by mass balance equations compared with direct measurement of emissions by stack testing. During this phase, Systems #3, #5, #6, and #7 were each tested twice about a week apart. The results showed that the SOx lb/hr calculated by mass balance (from the inlet percent sulfur concentrations) overestimated the stack measurements for all systems, by a factor ranging from 1.5 to 2.5.

Based on the above evaluation, the requirement for daily monitoring of SOx inlet concentrations along with hourly mass balance computations of SOx lb/hr emissions will satisfy the USEPA Periodic Monitoring Guidance criteria. Moreover, this will be coupled with an enforceable requirement for Celite to adjust process feed rates when hourly mass balance computations indicate that SOx emissions are approaching the lb/hr permit limit. (See section 9.C.4.c) The hourly mass balance calculations will be based on real-time feed rates measured by Celite weigh scales and daily measured feed sulfur concentrations (with a statistical upper bound adjustment to account for any hourly variation).

The *Sulfur Dioxide Compliance Monitoring Protocol* has been approved by the APCD and is provided in Attachment 10.7. Given the conservative assumptions built into the Protocol, it will be more than satisfactory for assuring ongoing compliance with the APCD Rule 309 SOx limits applicable to the CHEAFs and Venturi Scrubber stacks.

4.9.2 Process Monitoring: In many instances, ongoing compliance beyond a single (snap shot) source test is assessed by the use of process monitoring systems. Examples of these monitors include: engine hour meters and fuel usage meters. Once these process monitors are in place, it is important that they be well maintained and calibrated to ensure that the required accuracy and precision of the devices are within specifications. At a minimum, the following process monitors will be required to be calibrated and maintained in good working order:

- Fuel use meters
  - Boilers #1 and #2:
    - dedicated, pressure corrected natural gas meter

dedicated, #6 fuel oil totalizer  
 #3, 5, 6 and 7 System kilns and furnaces:  
 dedicated, instantaneous natural gas fuel feed meter

- Hour Meters, non-resettable (ICEs 8115, 8716, 8717)
- Manometers, magnahelic gauges or equivalent for pressure drop across baghouses

To implement the above calibration and maintenance requirements, a *Process Monitor Calibration and Maintenance Plan* is required of Celite. This Plan shall take into consideration manufacturer recommended maintenance and calibration schedules. Where manufacturer guidance is not available, the recommendations of comparable equipment manufacturers, when available and good engineering judgment shall be utilized.

- 4.9.3 **CAM:** Celite Lompoc plant is a major source that is subject to the USEPA's Compliance Assurance Monitoring (CAM) rule (40 CFR 64). Any emissions unit at the facility with uncontrolled emissions potential exceeding major source emission thresholds for any pollutant (excluding fugitives) is subject to CAM provisions. Celite must submit a compliance plan to the APCD for this rule at the time of Part 70 permit renewal or before if the permit is reopened due to a significant permit change.

#### 4.10 Source Testing/Sampling

Source testing and sampling are required in order to ensure compliance with permitted emission limits, prohibitory rules, control measures and the assumptions that form the basis of this operating permit. Tables 9.C.11.h.1 through 9.C.11.h.3 detail the pollutants and test methods of required testing. Frequency of required testing can be found via Permit Condition 9.C.11. Celite will be required to follow the APCD *Source Test Procedures Manual* (May 24, 1990 and all updates). The following emission units are required to be source tested.

APCD ID#	Emission Units	Source Test Table
1-15 & 1-16	ICEs 8716 and 8717	9.C.11.h.1
2-1	Boiler #1	9.C.11.h.2
2-2	Boiler #2	9.C.11.h.2
2-3	Silicate Plant Conveyor Dryer	9.C.11.h.2
2-7 → 2-16	CHEAFs and 5 Venturi Scrubber	9.C.11.h.2
3-1 → 3-52	Baghouses	9.C.11.h.3
4-1 → 4-2	Rotoclones	9.C.11.h.3

#### 4.11 Part 70 Engineering Review: Hazardous Air Pollutant Emissions

Two sets of emissions data is provided hazardous air pollutant emissions from the different categories of emission units at the Lompoc plant. The first set of emissions (section 4.11.1) is based on emission factors listed in USEPA *AP-42 (5th Ed., 11/95 and 6/97)* guideline volumes. However, factors listed in *California Air Toxics Emission Factors (April, 1995)*, (*CATEF*) have been used where the *AP-42* does not list the appropriate factors. If neither *AP-42* nor *CATEF* addresses the applicable HAP emission factors, the HAP emissions are estimated based on USEPA's *Air Emission Species Manual, Vol.1 (VOC Species Profiles, 2nd.Ed., 2/90)*.

If no direct data from the USEPA or the CARB were available, the HAP emissions are estimated by the use of Speciation Data obtained from California Air Resources Board's *Speciation Manual: VOC and PM Species Profiles (August 1991)*. These profiles use the underlying criteria pollutant (i.e., ROC) as the basis for estimating the HAP emissions included with the ROCs. These factors were applied to facility maximum design throughput limits.

The second set of emissions (section 4.11.2) is based on emission factors developed by the APCD for the AB2588 toxics emissions program. These estimates utilize actual facility throughputs whereas the section 4.11.1 estimates use maximum design facility throughputs.

The emissions data is located in Table 5.4. These emissions are estimates only. They are not limitations.

#### 4.11.1 *Emission Factors Based on USEPA AP-42 and CARB*

Diesel-fired IC engines with no control: The HAP emission factors listed below are for IC engines 8102, 8115, 8716 and 8717 (APCD ID# 1-13 through 1-16), i.e., an "SCC 2-03-001-01" engine (*Reference: AP-42, Table 3.3-2, from Air Chief, version 6.0, October 1998.*). Although ICEs 8716 and 8717 have NOx control, they have no HAP control. These 4 ICEs total 262 brake horsepower and have brake specific fuel consumption of 7500 Btu/bhp-hr.

<u>HAP</u>	<u>CAS #</u>	<u>HAP Emission Factor</u> (lb/MMBtu)
Benzene	71432	9.33 E-04
Toluene	108883	4.09 E-04
Xylene	1330207	2.85 E-04
Formaldehyde	50000	1.18 E-03
Acetaldehyde	75070	7.67 E-04
Comb.PAH	Miscellaneous #'s	1.68 E-04

Gasoline-fired, rich burn, non-cyclic IC engines with no control: The HAP emission factors listed below are for the IC engines with APCD ID#s 1-1 through 1-12 with no control, i.e., an "SCC 2-03-003-01" engine. These were applied to a total hydrocarbon emission factor of 2.09 lb/MMBtu for gasoline engines obtained from AP-42 Table 3.3-1. These ICEs total 507 horsepower and have brake specific fuel consumption of 11,000 Btu/bhp-hr.

<u>HAP</u>	<u>CAS #</u>	<u>CARB Speciation Manual</u> <u>VOC Profile</u> <u>Table 502, part II-32.</u>
Ethylbenzene	100414	0.0074
Benzene	71432	0.0385
Toluene	108883	0.1188
Xylene	1330207	0.0364
Formaldehyde	50000	0.0299
Hexane	110543	0.0452



Fuel oil #6 fired external combustion units: The HAP emission factors listed below are for the equipment units with APCD ID#s 2-2 through 2-5, and 2-7 through 2-16. This includes Boiler #2, (boilers 1 and 2 can not be operated simultaneously) the fuel oil heater, the 2 conveyor/flash dryers, and the kilns and furnaces of Lines 3, 5, 6, 7 and 11. (Reference: AP-42, Table 1.4-3; Air Chief, version 6.0, October 1998). The boiler, fuel oil heater and dryers total 99.3 MMBtu/hr and the furnaces and kilns total 470 MMBtu/hr for an overall total of natural gas-fired permitted external combustion units of 569.3 MMBtu/hr.

<u>HAP</u>	<u>CAS #</u>	<u>HAP Emission Factor</u> (lb./MMBtu)
Benzene	71432	2.06 E-06
Toluene	108883	3.33 E-06
Formaldehyde	50000	7.35 E-05
Hexane	110543	1.76 E-03

Diatomite emissions: The HAP emission factors listed below are for the processed diatomite emissions from the CHEAFs, the #5 Venturi Scrubber, the baghouses and the rotoclones. These are APCD ID #s , 2-7 through 2-16, 3-1 through 3-52, 4-1, and 4.2. (Reference:AP-42, 5<sup>th</sup> Ed, (1995), Table 11.22-1). The factors for the metal HAPs are fractions, in parts per million by weight, of the *emitted* tonnage of PM.

<u>HAP</u>	<u>CAS #</u>	<u>HAP Emission Factor</u>	<u>Units</u>
Chromium	7440473	100	ppmw of PM
Manganese	7439965	60	ppmw of PM
Nickel	7440020	120	ppmw of PM
Selenium	7782492	10	ppmw of PM

#### 4.11.2 Emission Factors Based on AB2588

The emissions factors for these emissions are provided in the 1993 AB2588 report (submitted July 21, 1995) for the Celite facility.

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**Table 4.8 – BACT Requirements**

Component	Technology	Performance Standard
345 Baghouse	Baghouse manufactured by Fabric Filters Northwest with automatic reverse pulse jet cleaning system, 552 polypropylene filter socks, 8685 ft <sup>2</sup> total cloth area, 4.0 scfm/ft <sup>2</sup> air-cloth ratio.	PM <sub>10</sub> : 0.002 gr/dscf PM: 0.007 gr/dscf

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## 5.0 Emissions

### 5.1 General

Emissions calculations are divided into "permitted" and "exempt" categories. Permit exempt equipment is determined by APCD Rule 202. Each emissions unit has a federally enforceable emission limit which is based on rule limits in most cases, rather than on maximum capacity of the equipment. Table 9.C lists the federally enforceable emission limits. Some emission units have an APCD-only enforceable limit that is lower than the federally enforceable limit listed in Table 9.C. APCD-only enforceable limits are given in Table 9.D. Section 5.4 provides the estimated HAP emissions from the Lompoc plant. Section 3.1 serves as the Part 70 list of insignificant emission units. Section 5.6 provides the net emissions increase calculation for the facility and the stationary source. In order to accurately track the emissions from a facility, the APCD uses a computer database. Attachment 10.4 contains the APCD's documentation for the information entered into that database.

### 5.2 Permitted Emission Limits - Emission Units

Each emissions unit associated with the facility was analyzed to determine the federally enforceable and APCD-only enforceable emission limits for the following pollutants:

- ⇒ Nitrogen Oxides (NO<sub>x</sub>)<sup>3</sup>
- ⇒ Reactive Organic Compounds (ROC)
- ⇒ Carbon Monoxide (CO)
- ⇒ Sulfur Oxides (SO<sub>x</sub>)<sup>4</sup>
- ⇒ Particulate Matter (PM)
- ⇒ Particulate Matter smaller than 10 microns (PM<sub>10</sub>)<sup>5</sup>

Each permitted emission unit has a federally enforceable emission limit which, in most cases, is based on rule limit is rather than on the maximum capacity of the equipment. The federally enforceable limits in Table 9.C typically reflect the rule limits. The Table 9.D limits typically reflect potential-to-emit for the applicable equipment. Section 4.0 provides a general discussion of the basic calculation methodologies and emission factors used. The Celite stationary source potential to emit is estimated in section 5.3. It should be noted that the pollutant limits in 9.C and 9.D are enforceable limits for each emission unit, and the sum of emissions over all permitted units does not equate to the potential to emit totals in section 5.3.

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<sup>3</sup> Calculated and reported as nitrogen dioxide (NO<sub>2</sub>)

<sup>4</sup> Calculated and reported as sulfur dioxide (SO<sub>2</sub>)

<sup>5</sup> Calculated and reported as all particulate matter smaller than 100 µm

### 5.3 **Part 70: Federal Potential to Emit for the Facility**

The values in the table below are from the Celite application. They are only estimates used to determine the applicability of Title V to this facility. In addition, they are not limits. (Not all of Celite's emission units have limits, but all have a potential to emit.)

**Table 5.3 - Potential to Emit**

	NO <sub>x</sub>	ROC	CO	SO <sub>x</sub>	TSP	PM <sub>10</sub>
<b>PTO 5840 – Lompoc plant (tons/year)</b>						
Permitted EUs	3788	1852	6603	8794	1295	1295
Exempt EUs*	21	4	96	3	1	1
Total	3809	1856	6699	8797	1296	1296

\* Only exempt emissions for which there was adequate information to calculate emissions are included here. See Attachment 10.6.

### 5.4 **Part 70: HAP Potential to Emit Emissions Estimates**

Total emissions of hazardous air pollutants (HAP) are estimated based on the emission factors listed in Section 4.11 for each emissions unit.

**Insert Table 5.4 HAPs ---**

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## 5.5 **Exempt Emission Sources/Part 70 Insignificant Emissions**

Equipment/activities exempt pursuant to Rule 202 include maintenance operations involving surface coating and various combustion devices. See Section 3.1 for a full list of exempt emission units. Under the APCD's Part 70 regulation, equipment/activities that are exempt under Rule 202 are considered insignificant units emissions. In addition, *insignificant activities* such as maintenance operations using paints and coatings, contribute to the facility emissions. Section 3.1 lists these exempt emissions units. Emissions were estimated for units for which adequate information exists to calculate emissions. The emissions from some of the equipment are listed in Attachment 10.7. These are emission estimates only. They are not limitations.

## 5.6 **Net Emissions Increase Calculation**

This facility's net emissions increase since November 15, 1990 (the day the federal Clean Air Act Amendments was adopted in 1990) is based on the NSR permit actions since November 30, 1990. They are listed in Table 5.6.

**NEI Calculation:**  $NEI = I + (P1 - P2) - D$

I = PTE of modifications

P1 = increases in PTE subject to NSR since 15 Nov 90

P2 = decreases in PTE since 15 Nov 90, where the emissions are included in P1 (not applicable)

D = decreases in actual emissions via permit actions if the emissions are not included in P2 or the Source Register

The NEI for The Lompoc plant is shown in Table 5.6.



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**Table 5.6.**  
**Facility Net Emission Increase, 1990 Baseline (FNEI90)**

Term <sup>1</sup>	Active Permits <sup>2</sup>	ROC	NOx	SOx	CO	PM <sub>10</sub>	PM
P1	PTO 8202 (6-'94)						
	lb/day					15.2	53.28
	TPY					2.78	9.72
D	ATC 8962 (1-'94)						
	lb/day					-21.1	-21.1
	TPY					-2.34	-2.34
P1 & D	PTO 9156 (9'94)						
	lb/day					0.19	0.21
	TPY					0.01	0.02
P1	PTO 9240 (7-'96)						
	lb/day				145.4		
	TPY				25.25		
P1	PTO 9551 (9-'97)						
	lb/day					0.082	0.082
	TPY					0.015	0.015
		Lb/day adjustment for negative NEI <sup>3</sup> .			5.63		
P1	PTO 9616 (1-'98)						
	lb/day					0.0	0.0
	TPY					0.0	0.0
P1	ATC 9757-01 (10-'98)						
	lb/day			3.60		7.30	7.30
	TPY			0.23		1.22	1.22
P1	ATC/PTO 10023						
	lb/day					21.29	21.29
	TPY					3.89	3.89
D	ATC/PTO 10023						
	Lb/day					-30.78	-40.29
	TPY					-5.64	-5.96
P1	PTO 9696						
	lb/day					2.19	2.19
	TPY					0.40	0.40
I	PTO 9757-02						
	lb/day					-	-
	TPY					0.02	0.02
NEI	Total						
	lb/day	0.00	0.00	3.60	145.40	0.00	22.96
	TPY	0.00	0.00	0.23	25.25	0.36	6.99

Table H Notes:

<sup>1</sup> Term column gives the term of the NEI equation (Rule 801.C) into which the listed emission values fall.

<sup>2</sup> Explanation of facts relevant to NEI are given for each permit in Table Notes.

<sup>3</sup> 5.63 lb/day was needed to zero out PM<sub>10</sub> NEI emissions since NEI can not be less than zero. This was initially documented in PTO 9551 and is therefore included here.

PTO 5840 was issued before the 11-15-90 cutoff, and so is not included in the NEI calculation.

PTO 8202: Added the 3 packing station baghouse. The project was subject to NSR. The PELs are PTE-based and are listed in Table 2 of the PTO and explained on page 2 of its Engineering Evaluation. The PTE falls into the P1 term.

ATC 8962: This removal of the 5NBH is documented on page 2 of the Engineering Evaluation as a decrease in actual emissions via this permit action. The reductions are not included in the P2 term or the Source Register, and so are creditable in the D term of the NEI equation.

PTO 9156: New soda ash baghouse and other equipment with elevator replacement. This project was subject to NSR. The difference between the old system and the replacement is a PTE increase on a daily and annual basis. (See Engineering Evaluation page 2). The daily and annual PTE increases fall into the P1 term of the NEI equation. The hourly change in PTE was zero for  $PM_{10}$ , and so has no effect on hourly  $PM_{10}$  NEI. The hourly change in PM is a decrease in actual emissions of 0.03 lb/hr and is included in the D term.

PTO 9240: NSR permit to bring boilers into compliance with Rule 342 (also: low-NOx burner). Only CO saw a PTE increase (7-10-96 Engineering Eval., pg. 4). As a post-11-15-90 PTE increase subject to NSR, this CO PTE falls into the P1 term.

ATCs 9863 and 9922 were omitted from this table since they both expired unused.

PTO 9616: New bagging equipment vents to pre-existing BH578, which was verified by source test to emit less than the PEL-based PTE, so no increase in the PTE of BH578 occurred. Accordingly, there is no term of the NEI equation into which the project emissions fall, and so PTO 9616 does not contribute to Facility NEI.

PTO 9551: the PTE of the subject permit is the PTE of this modification, and so is the P1 term of the NEI equation

ATCs 9191 & 9327 were never used; therefore, their contributions are not included.

ATCs 9353 & 9367 are not included because their PPTs do not replace the PTEs for the same equipment in PTO 5840.

PTO 9192 not included because previous emissions could not be calculated, hence change unknown (Eng. Eval., page 2)

ATC 10023: the actual  $PM_{10}$  value of the NEI lb/day "D" term as listed in ATC 10023 is 38.17 lb/day. However, ATC 10023 was issued concurrently with ATC 9696 and at the time of issuance, the actual NEI from ATC 9696 was unknown. Once the ATC 9696 NEI was determined through source testing, the NEI "D" term from ATC 10023 was adjusted so that that a negative stationary source NEI could be avoided. This is the -30.78 value listed in Table 5.6.

## **6.0 Air Quality Impact Analyses**

### **6.1 Modeling**

Air quality modeling was not required for this stationary source.

Non-attainment Pollutants: The NEI of Celite does not currently exceed the triggers of 80 lb/day PM10, 550 lb/day CO (if designated non-attainment) or 120 lb/day for the remaining non-attainment pollutants and their precursors.

Attainment Pollutants: The Celite stationary source has Entire Source Emissions over 20 pounds per hour, one of the triggers for AQIA for attainment pollutants. There have been a number of permit actions processed under New Source Review and Prevention of Significant Deterioration Rules (see Section 1.2.2). At the time of the permit actions, the APCD postponed AQIA until the cumulative increase is significant.

### **6.2 Increments**

An air quality increment analysis was not required for this stationary source.

### **6.3 Monitoring**

Air quality monitoring is not required for this stationary source.

### **6.4 Health Risk Assessment**

The Celite Lompoc plant stationary source is subject to the Air Toxics Hot-Spots Program (AB-2588). The most recent health risk assessment (HRA) for the facility was prepared by the APCD on June 15, 1998 under the requirements of the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588). The HRA is based on 1994 toxic emissions inventory data submitted to the APCD by Celite Corporation.

Based on the 1994 toxic emissions inventory for the Lompoc plant, cancer and non-cancer toxics risks off the property were estimated to be below the APCD's AB2588 significance thresholds.

Note that this analysis does not include reference to crystalline silica. If and when a risk factor is recommended for crystalline silica, a health risk assessment including emissions of crystalline silica from the Lompoc plant would be performed. Depending on the outcome of the risk assessment, toxic emissions reductions could be required.

## **7.0 CAP Consistency, Offset Requirements and ERCs**

### **7.1 General**

The Celite Lompoc plant stationary source is located in an ozone non-attainment area. Santa Barbara County is non-attainment for both the federal and state ozone ambient air quality standards. In addition, the County is non-attainment with the state PM<sub>10</sub> ambient air quality standard. Therefore, emissions from all emission units at the stationary source and its constituent facilities must be consistent with the provisions of the USEPA and State approved Clean Air Plans (CAP) and must not interfere with progress towards attainment of federal and state ambient air quality standards. Under APCD regulations, any modifications at the Lompoc plant that result in an emissions increase of any non-attainment pollutant exceeding 25 lbs/day must apply BACT (NAR). Additional increases may trigger offsets at the source or elsewhere so that there is a net air quality benefit for Santa Barbara County. These offset threshold levels are 55 lbs/day for all non-attainment pollutants except PM<sub>10</sub> for which the level is 80 lbs/day.

### **7.2 Clean Air Plan**

Santa Barbara County does not meet the current hourly federal ambient ozone standard of 0.12 ppm. The APCD is in the process of revising the 1994 Clean Air Plan for submittal to the USEPA through the State of California Air Resources Board. The 1998 CAP, if approved by the USEPA, will be incorporated into the California State Implementation Plan (SIP). The CAP will demonstrate a Rate-of-Progress and how the county will attain the ambient ozone standards by 1999 through the application of emission controls on all pollution sources and, if required, on stationary sources including the Celite Lompoc plant.

### **7.3 Offset Requirements**

The Celite Lompoc stationary source does not currently require emission offsets.

### **7.4 Emission Reduction Credits**

The Celite Lompoc stationary source does not currently generate or provide emission reduction credits.

## **8.0 Lead Agency Permit Consistency**

To the best of the APCD's knowledge, no other governmental agency's permit requires air quality mitigation.

## 9.0 Permit Conditions

This section lists the applicable permit conditions for the Lompoc plant. Section A lists the standard administrative conditions. Section B lists 'generic' permit conditions, including emission standards, for all equipment in this permit. Section C lists conditions affecting specific equipment. Section D lists non-federally enforceable (i.e., APCD only) permit conditions. Conditions listed in Sections A, B and C are enforceable by the USEPA, the APCD, the State of California and the public. Conditions listed in Section D are enforceable only by the APCD and the State of California. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable.

For the purposes of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this permit, nothing in the permit shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed.

### 9.A Standard Administrative Conditions

In case of discrepancy between the wording of a condition and the applicable APCD rule, the wording of the rule shall control. The following federally-enforceable administrative permit conditions apply to the Lompoc Plant:

#### A.1 Compliance with Permit Conditions.

- (a) The permittee shall comply with all permit conditions in Sections 9.A, 9.B and 9.C.
- (b) This permit does not convey property rights or exclusive privilege of any sort.
- (c) Any permit noncompliance constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application
- (d) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- (e) A pending permit action or notification of anticipated noncompliance does not stay any permit condition.
- (f) Within a reasonable time period, the permittee shall furnish any information requested by the Control Officer, in writing, for the purpose of determining:
  - (i) compliance with the permit, or
  - (ii) whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action.
- (g) In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible. [*Re: 40 CFR Part 70.6.(a)(6), APCD Rules 1303.D.1*]

- A.2 **Emergency Provisions.** For the purpose of seeking regulatory relief the permittee shall comply with the requirements of APCD Rule 505 (sections A, B.1 and D (Breakdown Conditions) and/or APCD Rule 1303.F, whichever is applicable to the emergency situation. In order to maintain an

affirmative defense under Rule 1303.F, the permittee shall provide the APCD, in writing, a “notice of emergency” within 2 days of the emergency. The “notice of emergency” shall contain the information/documentation listed in Sections (1) through (5) of Rule 1303.F. [Re: 40 CFR 70.6(g), APCD Rule 1303.F ]

- A.3 **Risk Management Plan.** Should the Celite facility, as defined in 40 CFR 68.3, become subject to part 68, then the owner or operator shall submit a risk management plan (RMP) by the date specified in 40 CFR 68.10. The facility shall certify compliance as part of the annual certification as required by 40 CFR part 70. [40 CFR 68.10]
- A.4 **Right of Entry.** The Regional Administrator of USEPA, the Control Officer, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises where a Part 70 Source is located or where records must be kept:
- (a) To inspect the stationary source, including monitoring and control equipment, work practices, operations, and emission-related activity, at reasonable times;
  - (b) To inspect and duplicate, at reasonable times, records required by this Permit to Operate;
  - (c) To sample substances or monitor emissions from the source or assess other parameters to assure compliance with the permit or applicable requirements, at reasonable times. Monitoring of emissions can include source testing.

[Re: APCD Rule 1303.D.2]

- A.5 **Severability.** The provisions of this Permit to Operate are severable and if any provision of this Permit to Operate is held invalid, the remainder of this Permit to Operate shall not be affected thereby. [Re: APCD Rules 103 and 1303.D.1]
- A.6 **Permit Life.** The Part 70 permit shall become invalid five years from the date of issuance unless a timely and complete renewal application is submitted to the APCD. Any operation of the source to which this Part 70 permit is issued beyond the expiration date of this Part 70 permit and without a valid Part 70 operating permit (or a complete Part 70 permit renewal application) shall be a violation of the CAAA, § 502(a) and 503(d) and of the APCD rules.

The permittee shall apply for renewal of the Part 70 permit no earlier than 18 months and not later than 6 months before the date of the permit expiration. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application. [Re: APCD Rule 1304.D.1]

- A.7 **Payment of Fees.** The permittee shall reimburse the APCD for all its Part 70 permit processing and compliance expenses for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the APCD and the USEPA pursuant to section 502(a) of the Clean Air Act. [Re: APCD Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7)]
- A.8 **Prompt Reporting of Deviations.** The Permittee shall submit a written report to the APCD documenting each and every deviation from the requirements of this permit or any applicable federal requirements within 7 days after discovery of the violation, but not later than 30 days after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation 2) equipment involved, 3) the quantity of excess pollutant emissions, if any, and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to APCD in accordance with Rule 505 (*Breakdown Conditions*), or Rule 1303.F (*Emergency Provisions*). [APCD Rule 1303.D.1, 40 CFR 70.6(a) (3)]

- A.9 **Permit Shield.** A permit shield has been granted for the rules, regulations, and standards listed in section 1.6.4 of this permit. This shield shall remain in effect until expiration of this permit or re-opening and re-issuance of this permit. [APCD Rule 1303]
- A.10 **Reporting Requirements/Compliance Certification.** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six months. These reports shall be submitted on APCD forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, the monitoring methods used to determine compliance, whether the compliance was continuous or intermittent, and include detailed information on the occurrence and correction of any deviations (excluding emergency upsets) from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1 and March 1, respectively, each year. Supporting monitoring data shall be submitted in accordance with the “Semi-Annual Monitoring/Compliance Verification Report” condition in section 9.C. The permittee shall include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. A Semi-Annual Monitoring/Compliance Verification Report for the period of January 1, 2000 through June 30, 2000 shall not be required. However, the certification report, as well as the written statement certifying the report, for the January 1, 2000 through June 30, 2000 period is required to be submitted. [Re: APCD Rules 1303.D.1, 1302.D.3, 1303.2.c].
- A.11 **Federally-enforceable Conditions.** Each federally enforceable condition in this permit shall be enforceable by the USEPA and members of the public. None of the conditions in the APCD-only enforceable section of this permit are federally enforceable or subject to the public/USEPA review [Re: CAAA, § 502(b)(6), 40 CFR 70.6(b)]
- A.12 **Recordkeeping Requirements.** The permittee shall maintain records of required monitoring information that include the following:
- (a) The date, place as defined in the permit, and time of sampling or measurements;
  - (b) The date(s) analyses were performed;
  - (c) The company or entity that performed the analyses;
  - (d) The analytical techniques or methods used;
  - (e) The results of such analyses; and
  - (f) The operating conditions as existing at the time of sampling or measurement;
- The records (electronic or hard copy), as well as all supporting information including calibration and maintenance records, shall be maintained for a minimum of five (5) years from date of initial entry by the permittee and shall be made available to the APCD upon request. “Supporting information” includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all logs and reports required by the permit. [Re: APCD Rule 1303.D.1.f, 40 CFR 70.6(a)(3)(ii)(A)]
- A.13 **Conditions for Permit Reopening.** The permit shall be reopened and revised for cause under any of the following circumstances:
- (a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30 day notice of intent to reopen the



permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.

- (b) Inaccurate Permit Provisions: If the APCD or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.
- (c) Applicable Requirement: If the APCD or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a federally enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

Administrative procedures to reopen a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which cause to reopen exists. If the permit is re-opened, and revised, it will be reissued with the expiration date that was listed in the permit before the re-opening. [Re: 40 CFR 70.7(f), 40 CFR 70.6(a)]

## 9.B. Generic Conditions

In case of discrepancy between the wording of a condition and an applicable federal or APCD rule, the wording of the rule shall control. The generic conditions listed below apply to all emission units, regardless of their category or emission rates. These conditions are federally enforceable. Compliance with these requirements is discussed in Section 3.

- B.1 **Circumvention (Rule 301).** A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26 (Air Resources) of the Health and Safety Code of the State of California or of SBCAPCD Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California, or of APCD Rule 303. [Re: APCD Rule 301]
- B.2 **Visible Emissions (Rule 302).** Celite shall not discharge into the atmosphere from any single source of emission any air contaminants for a period or periods aggregating more than three minutes in any one hour which is:
- (a) As dark or darker in shade as that designated as No. 1 on the Ringlemann Chart, as published by the United States Bureau of Mines, or
  - (b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.2.(a) above.
- Compliance shall be determined by visible emission evaluations by certified observers [Re: APCD Rule 302].
- B.3 **Nuisance (Rule 303).** No pollutant emissions from any source at Celite shall create nuisance conditions. No operations shall endanger health, safety or comfort, nor shall they damage any property or business. [Re: APCD Rule 303]
- B.4 **PM Concentration – Northern Zone (Rule 304).** Celite shall not discharge into the atmosphere, from any source, particulate matter in excess of 0.3 grain per cubic foot of gas at standard conditions. [Re: APCD Rule 304]
- B.5 **Dust and Fumes - North Zone (Rule 306).** Celite shall not discharge into the atmosphere, from any source, particulate matter in excess of the concentrations listed in Table 306 (a) of Rule 306. [Re: APCD Rule 306]
- B.6 **Specific Contaminants (Rule 309).** Celite shall not discharge into the atmosphere from any single source, sulfur compounds or combustion contaminants in excess of the applicable standards listed in Sections A and E of Rule 309. [Re: APCD Rule 309].
- B.7 **Odorous Organic Sulfides (Rule 310).** Celite shall not discharge into the atmosphere H<sub>2</sub>S and organic sulfides that result in a ground level impact beyond the Celite property boundary in excess of either 0.06 ppmv averaged over 3 minutes or 0.03 ppmv averaged over 1 hour. [Re: APCD Rule 310]
- B.8 **Sulfur Content of Fuels (Rule 311).** Celite shall not burn fuels with a sulfur content in excess of 0.5% (by weight) for liquid fuels and 796 ppmvd or 50 gr/100scf (calculated as H<sub>2</sub>S) for gaseous fuel. [Re: APCD Rule 311] Celite shall demonstrate compliance and maintain records for the different fuel types as follows:

- a) Fuel oil #6; The permittee shall comply with 1) or 2)

- 1) For each calendar year in which #6 fuel oil was used, Celite shall obtain the total sulfur content of the liquid fuel measured in accordance with ASTM D-2622, D-129, D-1552 or an equivalent reference method which has been previously approved, in writing, by the APCD.
- 2) Celite shall maintain written documentation of the total sulfur content of the fuel on a per shipment or quarterly basis. Such documentation shall consist of at least one of the following:
  - vendor certification
  - vendor bill of lading
  - vendor laboratory analysis
  - equivalent reference testing results which have prior written APCD approval

b) Diesel oil and gasoline: The permittee shall comply with 1) or 2)

- 1) Annually, Celite shall obtain measurements of the total sulfur content of the liquid fuel in accordance with ASTM D-2622, D-129, D-1552 or an equivalent reference method which has been previously approved, in writing, by the APCD.
- 2) Celite shall maintain written documentation of the total sulfur content of the fuel on a per shipment basis or quarterly basis. Such documentation shall consist of at least one of the following:
  - vendor certification
  - vendor bill of lading
  - vendor laboratory analysis
  - equivalent reference testing results which have prior written APCD approval

c) Natural gas: Celite shall maintain billing records or other data showing that the fuel gas is obtained from a natural gas utility. These records shall be obtained at least annually. Compliance shall also be based on fuel samples obtained during source testing when required by the source test plan.

**B.9 Organic Solvents (Rule 317).** Celite shall comply with the emission standards listed in Section B of Rule 317. Compliance with this condition shall be based on Celite's compliance with Condition C.8 of this permit. [*Re: APCD Rule 317*]

**B.10 Solvent Cleaning Operations (Rule 321).** Celite shall comply with the operating requirements of this rule when performing solvent cleaning operations unless relieved by rule exemption. Compliance with this condition shall be based on Celite's compliance with Condition C.8 of this permit. [*Re: APCD Rule 321*]

**B.11 Metal Surface Coating Thinner and Reducer (Rule 322).** The use of photochemically reactive solvents as thinners or reducers in metal surface coatings is prohibited. Compliance with this condition shall be based on Celite's compliance with Condition 9.C.8 of this permit and facility inspections. [*Re: APCD Rule 322*]

**B.12 Architectural Coatings (Rule 323).** Celite shall comply with the coating ROC content and handling standards listed in Section D of Rule 323 as well as the Administrative requirements listed in Section F of Rule 323.

Compliance with this condition shall be based on Celite's compliance with Condition C.8 of this permit and facility inspections. [Re: APCD Rules 323]

- B.13 **Disposal and Evaporation of Solvents (Rule 324).** Celite shall not dispose through atmospheric evaporation of more than one and a half gallons of any photochemically reactive solvent per day. Compliance with this condition shall be based on Celite's compliance with Condition C.8 of this permit and facility inspections. [Re: APCD Rule 324]
- B.14 **Motor Vehicle and Mobile Equipment Coating Operations (Rule 339).** Celite shall comply with the requirements of this rule when performing coating operations unless relieved by rule exemption. Compliance with this condition shall be based on Celite's compliance with Condition 9.C.8 of this permit. [Re: APCD Rule 339]
- B.15 **Emergency Episode Plan.** Celite shall submit Emergency Episode Plan for the Lompoc Plant for APCD review and approval within 180 days after the issuance of the Part 70 permit. The content of the plan shall be in accordance with the provisions of Rule 603. [Re: APCD Rule 1303, 40 CFR 70.6]
- B.16 **Equipment Replacements.** Pursuant to Rule 202.D.9, a permit shall not be required for equivalent routine replacement in whole or in part of any equipment where a Permit to Operate had previously been granted under Rule 201, providing emissions are not increased and there is no potential for violating any ambient air quality standard. An equivalent piece of equipment has a Potential to Emit, operating design capacity or actual demonstrated capacity less than or equal to that of the original piece of equipment, and is subject to the same limitations and permit conditions as the equipment being replaced. The owner or operator shall notify the District within 30 days of an equivalent routine replacement, unless the replacement equipment is identical as to make and model, and routine in which case notification is not required. This provision shall not grant any exemption from New Source Performance Standards.

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## 9.C Equipment Specific Conditions

This section includes non-generic federally enforceable conditions including emissions and operation limits, monitoring and recordkeeping and reporting for each specific equipment group. This section may also contain other non-generic requirements.

C.1 **IC Engines.** The following equipment is included in this emissions unit category:

APCD ID #	Name
1-01	ICE 8113, gasoline-fired, 49 bhp w/governor, 2080 hr/yr, air compressor drive
1-02	ICE 8700, gasoline-fired, 49 bhp w/governor, 2080 hr/yr, air blower drive
1-03	ICE 8771, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-04	ICE 8776, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-05	ICE 8778, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-06	ICE 8780, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-07	ICE 8786, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-08	ICE 8795, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-09	ICE 8797, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-10	ICE 8706, gasoline-fired, 30 bhp, 8760 hr/yr, air compressor drive
1-11	ICE 8700-1, gasoline-fired, 39 bhp, 8760 hr/yr, welder drive
1-12	ICE 8700-2, gasoline-fired, 39 bhp, 8760 hr/yr, welder drive
1-13	ICE 8102, diesel-fired, 44 bhp, 8760 hr/yr, water pump drive
1-14	ICE 8115, diesel-fired, 58 bhp, 199 hr/yr, air compressor drive
1-15	ICE 8716, diesel-fired, 80 bhp, 2080 hr/yr, air compressor drive
1-16	ICE 8717, diesel-fired, 80 bhp, 2080 hr/yr, air compressor drive

- (a) **Emission Limits:** Mass emissions from ICEs 8115, 8716 and 8717 listed above shall not exceed the limits listed in Table 9.C. [Ref: ATC 8945 PC 2] In addition, the following specific emission limits apply:
- (i) ICEs 8716 and 8717 - Controlled emissions of NO<sub>x</sub> from each engine shall not exceed either 8.4 g/bhp-hr or 797 ppmv at 15 percent oxygen or 2,400 ppmv at 3 percent oxygen. Compliance shall be based on Section (c) below. [Ref: Rule 333]
- (b) **Operational Limits:** The following operational limits apply to the IC engines:
- (i) **Timing Retard** - ICE's 8716 and 8717 shall have fuel injection timing retarded to the extent necessary to comply with Section D.4 of Rule 333. This setting shall be marked on the ICE timing cover by a painted mark between the fuel pump housing and the ICE timing cover.
- (ii) **Schedule Limits** - Celite shall not operate IC engines 8113, 8700, 8716 and 8717 more than 2080 hours per year. IC engine 8115 shall not operate more than 199 hours per year [Ref: ATC 8945 PC 13, ATC 8822]
- (iii) **Engine Identification and Maintenance** - Each IC engine shall be identified with a permanently-affixed plate, tag or marking, referencing either: (i) the IC engine's make, model, serial number, rated BHP and corresponding RPM; or (ii) the operator's unique tag number. The tag shall be made accessible and legible to facilitate APCD inspection of the IC engine. [Ref: Rule 333, ATC 8945 PC 11.h, 40 CFR 70.3(c)]

- (iv) *Heat Input Limits* – Celite shall not exceed the following heat inputs:  
 ICE 8717: 0.6 MMBtu/hr and 1248 MMBtu/yr.  
 ICE 8716: 0.6 MMBtu/hr and 1248 MMBtu/yr.  
 ICE 8700: 0.54 MMBtu/hr and 1121 MMBtu/yr.  
 ICE 8113: 0.54 MMBtu/hr and 1121 MMBtu/yr  
 ICE 8115: 0.44 MMBtu/hr and 87 MMBtu/yr.  
 [Ref ATC 8945 PC 1.a & b, ATC 8822]
- (c) Monitoring: Celite shall meet the following source testing and periodic monitoring requirements.
  - (i) *Inspection and Maintenance Plan (I&M Plan) for ICEs 1-14 and 1-16* - Celite shall implement quarterly inspections on the engines according to the APCD-approved Engine Inspection and Maintenance Plan dated 25 June 1993 (or most recent subsequent APCD-approved revision) consistent with the requirements of Rule 333, Section E. This Plan, and the most recent subsequent APCD-approved revision, is incorporated by reference as an enforceable part of this permit. [Ref: Rule 333, ATC 8945 PC 8 & 10]
  - (ii) *Source Testing* - Celite shall perform biennial source testing of air emissions and process parameters listed in Table 9.C.11.h.1 (Source Test Requirements for ICEs) in accordance with the requirements of Rule 333, Section G and condition 9.C.11. [Ref: Rule 333, ATC 8945 PC 4,5,6]
  - (iii) *Fuel Metering* - Celite shall monitor fuel usage of the ICEs listed in 9.C.1(b)(iv) by use of a fuel meter at the refueling station as specified in the Rule 333 Inspection and Maintenance and Fuel Use Plans dated August 25, 1993. Celite shall verify sulfur content by complying with 9.B.8.
  - (iv) *Hour Meter* – Celite shall measure the number of hours of operation of each ICE listed in 9.C.1(b)(ii) above using a non-resettable hour meter. [Ref: Rule 333.H.1.b, ATC 8822-01]
- (d) Recordkeeping: Celite shall maintain logs of the following to demonstrate compliance with emission limits, operation limits and monitoring requirements above.
  - (i) Monthly and annual fuel usage in units of gallons for ICEs 8716 and 8717. Monthly and annual fuel usage in units of MMBtu for ICEs 8113, 8115 and 8700. [Ref: Rule 333, ATC 8945 PC 11.b, 40 CFR 70.6]
  - (ii) The monthly and annual hours of operation for IC engines 8115, 8700, 8113, 8716 and 8717 (by ID number). [Ref: Rule 333, ATC 8945 PC 11.c, ATC 8822-01, 40 CFR 70.6]
  - (iii) The sulfur content by complying with 9.B.8. On an annual basis, the heating value of the diesel fuel and gasoline (Btu/gal) shall be recorded. The vendor certification or bill of lading shall be maintained and made available for District inspection. [Ref: Rule 333, ATC 8945 PC 11.e&f, 40 CFR 70.6]
  - (iv) For IC engines 8716 and 8717, IC engine operations logs, including quarterly inspection results, consistent with the requirements of Rule 333.H. [Ref: Rule 333, ATC 8945-01 PC 11.a]
  - (v) If an operator's tag number is used in lieu of an IC engine identification plate, documentation which references the operator's unique IC engine ID number to a list containing the make, model, serial number, rated maximum BHP and the corresponding RPM. [Ref: Rule 333, ATC 8945 PC 11.h]
- (e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report must list all the data required by condition 9.C.14 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*). [Ref: Rule 333, ATC 8945 PC 12]

(Re: APCD Rules 304, 309.E.3, 311.C, 333 and 1303, ATC 8945-01, 40 CFR 70.6)

C.2 **Combustion Equipment - Boilers.** The following equipment is included in this emissions unit category:

APCD ID #	Name
2-1	Silicates Boiler #1, 15.5 MMBtu/hr, PUC gas or low-sulfur fuel oil #6
2-2	Silicates Boiler #2, 23 MMBtu/hr, PUC gas or low sulfur fuel oil #6 , low-NOx burner

- (a) **Emission Limits:** Mass emissions from the boilers listed above shall not exceed the limits listed in Table 9.C. In addition, the following specific emission limits apply:
- (i) Regardless of fuel type, emissions of PM from Boiler #1 shall not exceed 0.3 grains per standard cubic foot of exhaust gas, and emissions of sulfur compounds (calculated as SO<sub>2</sub>) shall not exceed 0.2% by volume (2000 ppmv). Compliance shall be based on the reporting requirements of permit condition C.14 listed in this permit. [Ref: Rule 304, 309.A.1, 40 CFR 70.6]
  - (ii) When operated on natural gas, emissions of NOx from Boiler #2 shall not exceed either 30 ppmv or 0.036 lb/MMBtu of heat input. Emissions of carbon monoxide from Boiler #2 shall not exceed 400 ppmv regardless of fuel type. The ppmv limits in this section are referenced at dry stack-gas conditions and 3% by volume stack-gas oxygen. Compliance shall be based on source testing. [Ref: Rule 342, ATC 9240-02 PCs 2, 6 & 7]
  - (iii) Operation of Boiler #1 shall not exceed 8,999 MMBtu/yr. Operation of Boiler #2 shall not exceed 8520 hours/yr or 195,960 MMBtu/yr.
- (b) **Operational Limits:**
- (i) *Tuning Requirements* – Boiler #1 shall be tuned at least once every 12 months in accordance with the procedure in Attachment 1 of Rule 342. [Ref: Rule 342.D.2 and G]
  - (ii) *PUC Quality Gas Requirement* – Boiler #2 shall be fired only on PUC-quality natural gas when it is fired on gaseous fuel. [Ref ATC 9240-02 PCs 2 & 3]
  - (iii) *Fuel Gas Sulfur Limit for Boiler #1* - The sulfur content of natural gas combusted shall not exceed 50 gr/100scf (797 ppmv) total sulfur calculated as hydrogen sulfide at standard conditions. Celite shall demonstrate compliance by use of utility (PUC-quality) natural gas.
  - (iii) *Fuel Gas Sulfur and Hydrogen Sulfide Limits for Boiler #2* - The total sulfur and hydrogen sulfide contents of the natural gas combusted shall not exceed 80 ppmv and 4 ppmv, respectively, calculated as hydrogen sulfide at standard conditions. Celite shall demonstrate compliance with gas analyses provided by the gas utility. [Ref ATC 9240-02 PCs 2 & 3]
  - (iv) *Fuel Oil Limits* - Fuel oil #6 may be used so long as the total annual time for each boiler operating on fuel oil is less than 168 hours per year, excluding equipment testing time not exceeding 24 hours per year. The sulfur content of #6 fuel oil combusted shall not exceed 0.5% by weight total sulfur calculated as sulfur at standard conditions. Celite shall verify sulfur content by complying with 9.B.8. [Ref: Rule 311, ATC 9240-02 PC 4,10]
  - (vi) *Boiler #2 Heat Input and Hourly Limits.*- Celite shall not operate Boiler #2 in excess of 110% of the hourly heat input at which it has been source tested and found to be in compliance. However, in no case shall Boiler #2 be operated at over 23 MMBtu/hr or 195,960 MMBtu/yr. Hourly operation is limited to 8520 hr/yr. [Ref ATC 9240-02 PC 1]



- (vii) *Boiler #1 Heat Input Limit.* Boiler #1 may be operated no more than 8,999 MMBtu/year. [Rule 342.D.1, ATC 9240-02 PC 10]
  - (viii) *PUC Natural Gas Curtailment* - PUC-quality natural gas shall be used at all times in Silicates Boiler #2 when it is in operation except during periods of natural gas curtailment as imposed by the gas utility. [ATC 9240-02 PC 10]
- (c) **Monitoring:** The following monitoring conditions apply to the boilers:
- (i) *Source Testing* - Celite shall perform source testing of air emissions and process parameters listed in Table 9.C.11.h.2 (Source Test Requirements for External Combustion Units) in accordance with the requirements of Rule 342, Sections F, G and H. The test frequency of Boiler #1 shall be in accordance with permit condition 9.C.11 unless the hours of operation of this unit exceeds 100 for any calendar year, in which case, the unit shall be tested within six months of the date it exceeded 100 hours and tested biennially thereafter. Boiler #2 shall be source tested biennially. Source testing shall be consistent with permit Condition 9.C.11 (Source Testing). [Ref: Rule 342.G.1, 40 CFR 70.6]
  - (ii) *Fuel Metering* - Celite shall monitor fuel gas used by Boiler #2 by use of a dedicated, pressure corrected, fuel use totalizing flow meter. The volumes of #6 fuel oil used by Boiler #2 shall be monitored by use of a dedicated fuel use totalizer capable of recording gallons of liquid fuel used during each two hour period by Boiler #2. The meters shall be included in and operated consistent with World Mineral's *Process Monitor Calibration and Maintenance Plan*. [Ref: Rule 342.I.2, ATC 9240-02 PCs 8 & 9]
- (d) **Recordkeeping:** Celite shall maintain the following records for the boilers:
- (i) *Fuel Volumes* - The monthly and annual usage of each fuel. [Ref 342.I.1, ATC 9240-02 PC 12.a and b]
  - (ii) *Fuel Higher Heating Value* - Obtain the higher heating value of each fuel in accordance with 9.B.8 [Ref 342.I.1]
  - (iii) *Fuel Oil #6 Usage and Sulfur Content/Natural Gas Sulfur Content* - For Boiler #2, Celite shall record usage of #6 fuel oil by means of a dedicated fuel use totalizer capable of recording gallons of liquid fuel used during each two-hour period of use totaled on a monthly basis. Use of fuel during any recording period will be considered as two hours of fuel use. Documentation of the sulfur content shall be in accordance with 9.B.8. For PUC quality gas, these records shall be obtained at least annually.[Ref ATC 9240-02 PC 4 & 5]
  - (iv) *#6 Fuel Oil-fired Hours* - For Boiler #2, Celite shall record the hours of operation of the boiler while burning fuel oil #6 under the exemption under Rule 342 (natural gas curtailment) and equipment testing. [Ref: 342.I.2, ATC 9240-02 PC 12.c]
  - (v) *Tune-ups* - For Boiler #1, Celite shall maintain documentation that verifies that the tune-ups required by Condition 9.C.2.(b) were performed.
  - (vi) *Maintenance Logs* - Celite shall maintain maintenance logs for Boiler #2 and the fuel flow meter. [Ref: ATC 9240-02 PC 12.d]
- (e) **Reporting:** On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report must list all the data required by condition 9.C.14 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*). The report shall list all data required by permit condition 9.C.2(d) above except for 9.C.2.d. vi. [Re: APCD Rules 311, 342, 1303, PTO 9240, 40 CFR 70.6]

**C.3 Combustion Equipment – Silicates Dryers and Oil Heater External Combustion Units.** The following equipment is included in this emissions unit category:

APCD ID #	Name
2-3	Silicates Conveyor Dryer, 56.3 MMBtu/hr, PUC gas fired
2-4	Silicates Flash Dryer, 17.5 MMBtu/hr, PUC gas fired
2-5	Fuel oil heater, 2.5 MMBtu/hr, diesel or PUC gas fired

- (a) Emission Limits: Mass emissions from the external combustion units listed above shall not exceed the limits listed in Table 9.C. [Ref: 304, 309.E.3, 311.C]
- (b) Operating Limits: There are no equipment-specific federally enforceable operating limits.
- (c) Monitoring:
  - (i) Celite shall biennially clean and adjust the burners of units with APCD ID# 2-3 through 2-5. [Ref: 40 CFR 70.6]
  - (ii) *Source Testing* - For the Silicates Conveyor Dryer (ID# 2-3), Celite shall perform biennial source testing of air emissions and process parameters listed in Table 9.C.11.h.2 (Source Test Requirements). This unit shall be the first unit tested in Group 1 of Table 9.C.11.h.2. All three zones (stacks) shall be tested during the initial source test. Subsequent testing shall require only one zone (stack) to be tested. For one zone (stack) testing, the zone to be tested and the method used to determine compliance with permitted emission limits shall be included in the source test plan for approval by the APCD. [Ref: 40 CFR 70.6]
- (d) Recordkeeping: Celite shall maintain the following records for the external combustion units 2-3 through 2-5:
  - (i) *Burner Maintenance* - Celite shall record the dates that burners are cleaned and/or adjusted.
  - (ii) *Fuel Sulfur Content* - Celite shall maintain the documentation required by 9.B.8 for fuels. [Ref: 40 CFR 70.6].
- (e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report must list all the data required by condition 9.C.14 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*). [Re: APCD Rules 311.C and 1303, 40 CFR 70.6]

- C.4 **Combustion Equipment – Kilns and Furnaces of Lines 3, 5, 6, 7 and 11.** The following equipment is included in this emissions unit category:

APCD ID #	Name
2-7	Line 3 Kiln, 56.25 MMBtu/hr, PUC gas or #6 fuel oil-fired
2-8	Line 3 Furnace, 45 MMBtu/hr, PUC gas or #6 fuel oil-fired
2-9	Line 5 Kiln, 43.75 MMBtu/hr, PUC gas or #6 fuel oil-fired
2-10	Line 5 Furnace, 45 MMBtu/hr, PUC gas or #6 fuel oil-fired
2-11	Line 6 Kiln, 50 MMBtu/hr, PUC gas or #6 fuel oil-fired
2-12	Line 6 Furnace, 45 MMBtu/hr, PUC gas or #6 fuel oil-fired
2-13	Line 7 Kiln, 50 MMBtu/hr, PUC gas or #6 fuel oil-fired
2-14	Line 7 Furnace, 45 MMBtu/hr, PUC gas or #6 fuel oil-fired
2-15	Line 11 Furnace, 45 MMBtu/hr, PUC gas or #6 fuel oil-fired
2-16	Line 11 Furnace, 45 MMBtu/hr, PUC gas or #6 fuel oil-fired

- (a) Emission Limits: Mass emissions from the kilns and furnaces listed above shall not exceed the limits listed in Table 9.C.
- (b) Operational Limits:
- (i) *PUC Quality Gas Requirement* – Kilns and furnaces for Lines 3, 5, 6 and 7 shall be fired only on PUC-quality natural gas when they are fired on gaseous fuel. [Ref ATCs 9353 & 9367 PCs 1]
  - (ii) *Fuel Gas Sulfur and Hydrogen Sulfide Limits for Kilns and Furnaces of Lines 3, 5, 6 and 7 (Items 2-7 through 2-14)* - The total sulfur and hydrogen sulfide contents of the natural gas combusted shall not exceed 80 ppmv and 4 ppmv (PUC quality gas), respectively, calculated as hydrogen sulfide at standard conditions. Compliance shall be verified by use of utility (PUC quality) natural gas and analyses provided by the gas utility. [Ref ATC 9353 & 9367 PC 1]
  - (iii) *Fuel Oil Sulfur Limit* - The sulfur content limits of #6 fuel oil and compliance verification shall be based on 9.B.8. [Ref: Rule 311.C, ATC 9353 PCs 10 & 11, ATC 9367 PCs 10 & 11]

(iv) *Heat Input Limits* - Celite shall comply with the following heat input limits:

**Table 9.C.4.(b) Heat Input Limits for Operation on Natural Gas and Emission Control Device Designation**

APCD ID#	Line	Equipment Type	Heat input in MMBtu		Reference for Fed. Enforcement	Control Device
			Per hour	Per year		
2-7	3	Kiln	56.25	492,750	A9367 PC 2	3CHEAF
2-8	3	Furnace	45	394,200	A9367 PC 2	3CHEAF
2-9	5	Kiln	43.75	383,250	A9367 PC 2	5HEVSCR
2-10	5	Furnace	45	394,200	A9367 PC 2	5HEVSCR
2-11	6	Kiln	50	438,000	A9367 PC 2	6CHEAF
2-12	6	Furnace	45	394,200	A9367 PC 2	6CHEAF
2-13	7	Kiln	50	438,000	A9353 PC 2	7CHEAF
2-14	7	Furnace	45	394,200	A9353 PC 2	7CHEAF
2-15	11	Furnace	45	--	--	11CHEAF
2-16	11	Furnace	45	--	--	11CHEAF

**Table 9.C.4.(c) Heat Input Limits for Operation on Fuel Oil and Emission Control Device Designation**

APCD ID#	Line	Equipment Type	Heat input in MMBtu		Reference for Fed. Enforcement	Control Device
			Per hour	Per year		
2-7	3	Kiln	56.25	492,750	A9367 PC 2	3CHEAF
2-8	3	Furnace	45	394,200	A9367 PC 2	3CHEAF
2-9	5	Kiln	43.75	383,250	A9367 PC 2	5HEVSCR
2-10	5	Furnace	45	394,200	A9367 PC 2	5HEVSCR
2-11	6	Kiln	50	438,000	A9367 PC 2	6CHEAF
2-12	6	Furnace	45	394,200	A9367 PC 2	6CHEAF
2-13	7	Kiln	40	350,400	A9353 PC 2	7CHEAF
2-14	7	Furnace	45	394,200	A9353 PC 2	7CHEAF
2-15	11	Furnace	45	--	--	11CHEAF
2-16	11	Furnace	45	--	--	11CHEAF

Table 9.C.4(b) and 9.C.4(c) Notes:

CHEAF means Cleanable High Efficiency Air Filter

5HEVSCR means High Efficiency Venturi Scrubber

Fuel heat contents: Unless a higher actual heating value is approved by the APCD, fuel heat contents are assumed to be 1250 Btu/scf of PUC natural gas and 150,000 Btu/gal of #6 oil.

(c) **Monitoring:** The following monitoring conditions apply to the kilns and furnaces:

- (i) *Routine Source Testing* - Emissions from the kilns and furnaces are treated by the control devices listed for each in the last column of Tables 9.C.4.(b) and 9.C.4.(c). above. For each control device, Celite shall annually perform source testing of air emissions and process parameters listed in Table 9.C.11.h.2 (Source Test Requirements for External Combustion Units). Celite shall adhere to Condition 9.C.11 (Source Testing) . [Ref: 40 CFR 70.6]

- (ii) *Liquid Fuel Source Testing* – For furnaces and kilns of Lines 3, 5, 6 and 7, source testing is required during the next liquid fuel operating run. Celite shall perform source testing of air emissions and process parameters listed in Table 9.C.11.h.2 (Source Test Requirements for External Combustion Units). Celite shall inform the APCD 20 days in advance of operation and testing using the liquid fuel firing mode. Celite shall adhere to Condition 9.C.11 (Source Testing). [Ref: ATC 9367 PC 3.a, ATC 9353 PC 4.a]
  - (iii) *Fuel Metering* - For furnaces and kilns of Lines 3, 5, 6 and 7, the gas or oil volumetric flow rates used by the kilns and furnaces shall be monitored by use of dedicated, instantaneous fuel feed meters. These meters shall be operated consistent with Celite's *Process Monitor Calibration and Maintenance Plan*. [Ref: ATC 9353 & 9367 PC 2]
  - (iv) *Heat Input Tracking* – For each furnace and kiln, Celite shall determine the peak heat input per hour in MMBtu/hr for each month. [Ref: 40 CFR 70.6 ]
  - (v) *Diatomaceous Earth (DE) Sulfur Content Testing* – Once every calendar quarter, Celite shall measure the total sulfur content of the DE in Lines 3, 5, 6, & 7, before the furnace and after the kiln. This analysis shall be done in accordance with ASTM D-5016-89 or an equivalent reference method which has been previously approved, in writing, by the APCD. Celite shall also measure for each sample the amount of soda ash being added during sampling. [Ref: ATC 9353 PC 7, ATC 9367 PC 6]
  - (vi) *Continuous Emission Monitoring*: Celite shall monitor the hourly SOx emissions from the #3, #5, #6 and #7 system CHEAFS and the Venturi Scrubber consistent with the District-approved SOx Compliance Monitoring Protocol. See permit condition 9.C.13.
  - (vii) *Visible Emissions Observations*: Celite shall perform a visual inspection of each CHEAF stack and the 5 HEV stack exhaust once per day. Once each calendar quarter, Celite shall use EPA Method 9 performed by a certified observer to obtain a reading of visible emissions from the stack of each CHEAF and the 5HEV. The Method 9 readings shall be taken in calendar quarters during which the CHEAF or HEV is operated and shall be taken when a furnace or kiln served by the CHEAF or HEV is operating. If visible emissions are observed during the daily inspection or quarterly Method 9 inspection, corrective action shall be immediately implemented. If visible emissions are not eliminated within 24 hours, Celite shall shut down the equipment controlled by this equipment until corrective action that eliminates visible emissions is completed.
- (d) Recordkeeping: Celite shall maintain the following records for the kilns and furnaces:
- (i) *Heat Input Tracking* - For each furnace and kiln, Celite shall record monthly the peak heat input per hour in MMBtu/hr [Ref: 40 CFR 70.6]
  - (ii) *Fuel Higher Heating Value* - For the fuel burned by the furnaces and kilns of Lines 3, 5, 6 and 7, Celite shall record the higher heating value of each fuel. [Ref ATC 9353 PC 11, ATC 9367 PC 10]
  - (iii) *Sulfur Content of Liquid Fuel* - For the fuel oil burned by the furnaces and kilns of Lines 3, 5, 6 and 7, Celite shall record usage of #6 fuel oil in such a format that District personnel are able to use the data to verify compliance during a typical District inspection. Documentation of the sulfur content shall be maintained in accordance with 9.B.8. [Ref ATC 9353 PC 10,11; ATC 9367 PC 10,11]
  - (iv) *Fuel Sulfur Content for Line 11 Furnaces (2-15 and 2-16)* - Celite shall maintain records of fuel sulfur content in accordance with 9.B.8. For PUC natural gas, these records shall be obtained at least annually. [Ref: 40 CFR 70.6].
  - (iv) *Diatomaceous Earth Sulfur Content* - For DE processed in the furnaces and kilns of Lines 3, 5, 6 and 7, total sulfur results shall be recorded as percent by weight. Celite shall also report for each sample the amount of soda ash being added during sampling and the difference between the inlet and outlet samples. [Ref: ATC 9353 PC 7, ATC 9367 PC 7]

- (vi) *Visible Emission Observations* - For the CHEAFS and 5HEV, Celite shall record whether or not daily visible emissions are present or the date and initials of a responsible person when the CHEAF or 5HEV is non-operational. For all CHEAFs and the 5HEV, Celite shall record the following for the readings obtained by the use of USEPA Method 9 as required in Condition 9.C.4.c. (vii): date of reading, name of reader, most recent Method 9 certification date of reader, control device name, individual interval readings required by Method 9, and the final reading. [Ref: 40 CFR 70.6]
  - (vii) *Sulfur Emissions Monitoring* - Celite shall adhere to the recordkeeping requirements listed in the SOx Compliance Monitoring Protocol.
- (e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report must list all the data required by condition 9.C.14 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*). [Re: APCD Rules 311.C and 1303, ATCs 9353 and 9367, 40 CFR 70.6]

C.5 **Baghouses.** The following equipment is included in this emissions unit category:

**Table 9.C.5 Baggouses**

APCD ID No.	World Minerals ID	Baghouse Name	Type
3-1	516VBH	516 Ventilation BH	Enclosed
3-2	616VBH	616 Ventilation BH	Enclosed
3-3	6APVBH	6 auto packing station BH (678)	Enclosed
3-4	3ASBH	3 air sifter BH	Enclosed
3-5	5ASBH	5 sir sifter BH	Enclosed
3-7	11NBH	11 Lower Natural BH	Open
3-8	11NBH	11 Upper Natural BH	Open
3-9	11VBH	11 Mill Vent BH	Enclosed
3-10	305BH	305 BH	Open
3-11	318BH	318 BH	Enclosed
3-12	345BH	3 automatic packing stn BH (345)	Enclosed
3-13	378BH	378 BH/ 3 Dry End	Enclosed
3-14	3BBVBH	3 Bulk Bin BH	Enclosed
3-15	3DBH	3 Dry End BH	Open
3-16	3NBH	3 Natural BH	Open
3-17	4BBVBH	4 Bulk Bin BH	Enclosed
3-18	4DBH	4 Dry End BH	Open
3-19	5APVBH	5 auto packing station BH (578)	Enclosed
3-20	5DBH	5 Dry End BH	Open
3-21	5DVBH	5 Dry End VBH	Open
3-22	6DBH	601 Dry End BH	Open
3-23	6DBH	602 Dry End BH	Open
3-24	6DVBH	6 Dry End Ventilation BH	Open
3-25	6NBH	6 Natural BH	Open
3-26	6NVBH	6 Natural Ventilation BH	Open
3-27	6SFSF	6 Superfine superfloss BH	Open
3-28	7DBH	7 Dry End BH	Open
3-29	7DVBH	7 Dry End Ventilation BH	Open
3-30	7NBH	7 Natural BH	Open
3-31	978BH	978 BH	Enclosed
3-32	CAFABH	Celite Analytical. Filter Aid BH	Open
3-33	CPVBHN	Chromosorb Vent BH-N	Enclosed
3-34	CPVBHS	Chromosorb Vent BH-S	Enclosed
3-35	CRVBH	Crushing Plant Vent BH	Enclosed
3-36	MPVBH	Mortar Plant Vent BH	Enclosed

**TABLE 9.C.5 BAGHOUSES (CONTINUED)**

<b>APCD ID #</b>	<b>World Minerals ID</b>	<b>Baghouse Name</b>	<b>Type</b>
3-37	PPCVBH	Pellet Plant Vent BH -cold	Enclosed
3-38	PPHVBH	Pellet Plant Vent BH - hot	Enclosed
3-39	PSWBH	Preseparator Waste BH	Enclosed
3-40	GWBH	General Waste BH	Enclosed
3-41	RBH	Recirculating Syst VBH	Enclosed
3-42	SABH	Soda ash BH	Enclosed
3-43	SFPBH	Snow Floss Plant BH	Open
3-44	SPAWBH	Silicates plant acid wash BH	Enclosed
3-45	SPFDBH	Silicates plant flash dryer BH	Enclosed
3-46	SPFMBH	Silicates plant feed mix BH	Enclosed
3-47	SPLTBH	Silicates plant lime BH	Enclosed
3-48	SPPBH	Silicates plant production BH	Enclosed
3-49	SPVBH	Silicates plant Vent BH-packing	Enclosed
3-50	SRBH	Sackroom BH	Open
3-51	XPBH	XP plant Ventilation BH	Open
3-52	PVBH	Portable Ventilation BH	Enclosed

- (a) Emission Limits: Mass emissions from baghouses listed above shall not exceed the limits listed in Table 9.C. In addition, the following specific emission limits apply:
- (i) Concentration Limits and Mass Emission Rates: Controlled emissions of particulate matter from each baghouse shall not exceed the concentration limit listed for it in Table 9.C.5.a. SO<sub>x</sub> exhaust emissions from baghouses ID#s 3-7, 3-8, 3-16, 3-25, & 3-30 shall not exceed 2000 ppmv or 200 lb/hr. Compliance shall be based on inspections and source testing according to Section 9.C.5.c. [Ref: see last 2 columns of Table 9.C.5.a]



**Table 9.C.5.a. Stack Concentration, Fugitive Emission and Exhaust Flow Limits**

APCD ID #	Celite ID	Baghouse Name	PM Limit in gr/dscf (PM10)	Ref for Fed. Enf Limit Doc/§	9.C.5.a.iii Fugitive Emissions
3-1	516VBH	516 Ventilation baghouse	0.0217	NSPS OOO	✓
3-2	616VBH	616 Ventilation baghouse	0.0217	NSPS OOO	✓
3-4	3ASBH	3 air sifter BH	0.00044	ATC 9551/ 1,2	
3-5	5ASBH	5 air sifter BH	0.00044	ATC 9551/ 1,2	
3-12	345VBH	3 Auto Packing Stn VBH(345)	0.007 (0.002)	ATC 8202-01/4,8	✓
3-13	378BH	378BH	0.0074	ATC 9696-01/3.a,2)	✓
3-14	3BBVBH	#3 Bulk Bin Ventilation baghse	0.0044	ATC 9193	✓
3-17	4BBVBH	#4 Bulk Bin Ventilation baghse	0.0044	ATC 9193	✓
3-19	5APVBH	5 auto packing station BH(578)	0.005	ATC 9696-01/3.a,2)	✓
3-35	CRVBH	Crushing plant ventilation BH	0.0059	ATC 9192/ 1,2a	
3-40	GWBH	General Waste Baghouse	0.0045	ATC 10023/ 9.2	
3-42	SABH	Soda Ash baghouse	0.0037	ATC 9156/ 2,5	Ducting only
3-49	SPVBH	Silicates Plant Ventilation BH	0.0072	ATC 9696-01/3.a,2)	✓
		All baghouses not listed above	0.3	Rule 304	NA

(ii) *Visible Emission Limits* – Celite shall ensure that visible emissions from baghouses meet the requirements of Condition 9.B.2 (Visible Emissions). [Ref: Rule 302]

(iii) *NSPS Fugitive Emission Limits* - Celite shall maintain either 1 or 2 below for the baghouses checked off in the last column of Table 9.C.5.a [Ref: NSPS Subpart OOO 60.672(b)]:

1. Fugitive emissions from the baghouse operations shall not exceed 10% opacity, or
2. No visible fugitive emissions shall be emitted from the building enclosing the baghouse operation.

(b) Operational Limits: The following operational limits shall apply:

(i) *Operating Schedule* - The 6AS, 6PS and 7P packing stations shall operate no more than 8520 hours per year. The SABH baghouse shall operate no more than 8 hours per day and 1460 hours per year. [Ref: for the 6AS, 6PS, 7P, jolter bin and silicates packing stations ATC 9696-01 PC 2.a, for SABH see ATC 9156 EE pg 2]

(ii) *Pressure Drop* - Except during startup operations as defined below, the baghouses listed in Table 9.C.5(b) below shall operate within the pressure drop range indicated. Startup operations begin with powering up the exhaust blower associated with the baghouse and end with the pressure drop across the baghouse reaching steady state or when the elapsed time since powering up reaches 3 hours, whichever is sooner. [Ref: For 3ASBH & 5ASBH see ATC-mod 9551, for 3BBVBH & 4BBVBH see ATC 9193, 5APVBH, 378BH and the SPVBH see ATC 9696-01 PC 2.b, for CRVBH see ATC 9192 PC 6.b, and for the GWBH see ATC 10023 PC 9.1.b]

**Table 9.C.5(b). Baghouse Exhaust Flow Limits**

APCD ID #	Celite ID	Baghouse Name	Pressure Drop (inches of H <sub>2</sub> O)	Flow (scfm)
3-4	3ASBH	3 air sifter BH	2 – 10	473
3-5	5ASBH	5 air sifter BH	2 – 10	473
3-12	345BH	3 automatic packing station BH	--	38,850
3-13	378/BH	378 Baghouse	2.5-7.5	45,150
3-14	3BBVBH	3 Bulk Bin Baghouse	Less than 10	3360
3-17	4BBVBH	3 Bulk Bin Baghouse	Less than 10	3360
3-19	5APVBH	5 auto packing station BH (578)	1 – 7	31,500
3-35	CRVBH	Crushing Plant Vent BH	0.5 – 8	35,700
3-42	SABH	Soda Ash Baghouse	--	1,155
3-40	GWBH	General Waste Baghouse	1 – 8	24,150
3-49	SPVBH	Silicates Plant Vent. Baghouse	1 – 7	42,000

(iii) *Air Flow Rate* - Baghouses listed in Table 9.C.5(b) above shall not exceed the air flow rate specified for them in the table. [Ref: For 3ASBH & 5ASBH see ATC-mod 9551, for 345BH see ATC-mod 8202-02, for 3BBVBH & 4BBVBH see ATC-mod 9193, for 5APVBH, SPVBH and 378BH see ATC 9696-01 PC 2.b, for CRVBH see ATC-mod 9192 PC 1, for SABH see ATC-mod 9156, for the GBWH see ATC 10023 PC 9.1(a)].

(iv) *BACT* – Celite shall maintain emission control and plant design measures that represent BACT to the operation of the 545E, 545W, 281 and 560 packer stations and the associated bag cleaning and bag transfer operations. The required BACT measure is the 345BH baghouse which controls the particulate emissions from the packing equipment listed in this paragraph to a performance level of 0.002 gr/dscf PM10 and 0.007 gr/dscf PM of baghouse stack exhaust. (See section 4.8 of the Engineering Analysis and Table 4.8.). The BACT measures must be in place at all times for the life of the project. [Ref: ATC 8202 PC 7]

(c) Monitoring: The following source testing and periodic monitoring conditions shall apply:

(i) *Inspection and Maintenance Plans (I&M Plans)* - for 5APVBH, 378BH, 578BH, SPVBH and GBWH Celite shall implement inspections on these baghouses according to the respective APCD-approved Baghouse Inspection and Maintenance Plans issued for these baghouses and any APCD-approved manufacturer supplements. These plans, and any subsequent APCD-approved revisions, are incorporated by reference as an enforceable part of this permit. [Ref: ATC 9696-01 PC 5.c; ATC 10023 PC 9.3; ATC 9863 PC 4.b5.b]

(ii) *Maintenance Procedures for Soda Ash Bin Baghouse (Ventilation Filter)* - The cartridge type filters shall be replaced during scheduled overhaul, i.e., typically every three years. The cartridge type filters shall be inspected every quarter and worn filters replaced. [Ref: ATC 9156 PC 9]

(iii) *Maintenance Procedures for 3ASBH and 5ASBH* - Each baghouse shall be maintained consistent with manufacturer recommended weekly, monthly, and annual maintenance practices listed in the manufacturer literature included in ATC application # 9551. [Ref: ATC 9551 PC 5]

(iv) *Visual Emissions Inspections for Enclosed Baghouses* - For all enclosed baghouses in Table 9.C.5, Celite shall observe baghouses daily when operational. On any day a baghouse is not operating, Celite shall have a responsible person make a written entry in the applicable baghouse operation log noting that the baghouse was not in operation. The responsible person shall certify the entry by initialing or signing their name next to the entry. Celite shall perform a visual inspection of each baghouse and baghouse exhaust once per day. In addition, once each calendar quarter, Celite shall use EPA Method 9 performed by a certified observer to obtain a reading of visible emissions from the stack of each baghouse. The Method 9 readings shall be taken in calendar quarters during which the baghouse operated and shall be taken when the baghouse is operating due to operation of some or all

of the equipment it serves. If visible emissions are observed during the daily inspection or quarterly Method 9 inspection, corrective action shall be immediately implemented. If visible emissions are not eliminated within 24 hours, Celite shall shut down the equipment controlled by the baghouse until corrective action that eliminates visible emissions is completed. [Ref: For 345VBH see ATC-mod 8202, for SABH see ATC-mod 9156, for CRVBH see ATC 9192 mod PC 6.a &c, for 3BBVBH & 4BBVBH see ATC-mod 9193 PC 5, for 3ASBH and 5ASBH see ATC mod 9551 PC 5.a, for the GWBH see ATC 10023 PC 9.4, for the 378BH, SPVBH and 5APVBH see ATC 9696-01 PC 5.b, Ref: 40 CFR 70.6]

- (v) *Inspection and Maintenance Procedures for Enclosed Baghouses on Table 9.C.5 except the Silicate Plant Ventilation BH, 3ASBH, 5ASBH, CRVBH, 3BBVBH, 4BBVBH, 345BH, 378BH, 5APBH, GWBH and SABH*- all socks shall be replaced during scheduled overhaul, i.e. typically every three years. Silicate Plant Production baghouses shall be inspected internally weekly and ventilation baghouses monthly. [Ref: 40 CFR 70.6 & PTO 5840 3.11.2]
- (vi) *Inspection and Maintenance Procedures for the #345BH, 3BBVBH, 4BBVBH and CRVBH* - Maintenance of this equipment shall be consistent with the manufacturer specifications, or in the absence of manufacturer specifications, per Celite designated maintenance procedures. In either case, Celite shall provide such procedures to a District inspector upon request. [Ref: 40 CFR 70.6; ATC 8202, PC 12; ATC 9193 PC 4.c; ATC 9192 PC 4.c., ATC 9327 PC 5.]
- (vii) *Visual Emissions Inspection and Maintenance Practices for Open-Sock Baghouses* – Celite shall have a maintenance mechanic inspect baghouses daily when operational. On any day a baghouse is not operating, Celite shall have a responsible person make a written entry in the applicable baghouse operation log noting that the baghouse was not in operation. The responsible person shall certify the entry by initialing or signing their name next to the entry. Celite shall perform a visual inspection of each baghouse once per day. If any visible emissions are observed, corrective action shall be immediately implemented. If visible emissions are not eliminated within 24 hours, Celite shall shut down the equipment controlled by the baghouse until corrective action that eliminates visible emissions is completed. The mechanic shall tie off or field repair any leak found and note them on the inspection sheet, indicating whether the size of the hole in the sock was small (1/4 inch or smaller) or large (greater than 1/4 inch). Sock leaks reported by other personnel shall be tied off or field repaired whenever they occur. During a regularly scheduled overhaul day, the tied-off sock shall be replaced as indicated on the Wet End and Dry End Scheduled Overhaul sheets. Powder Mill system overhauls occur every 550 to 660 hours of operation. For open baghouses having hoppers with five or more socks tied off, the failed socks shall be replaced during overhaul.

Once each calendar quarter, Celite shall use EPA Method 22 to obtain a reading of visible emissions from the each open baghouse. The Method 22 readings shall be a minimum of five minutes and taken in calendar quarters during which the baghouse operated. These inspections shall be taken when the baghouse is operating due to operation of some or all of the equipment it serves.

- (viii) *Pressure Drop Monitoring*: For Baghouses 5APVBH, 3ASBH and 5ASBH, CRVBH, 3BBVBH, 4BBVBH, 378BH, GWBH and the SPVBH, the pressure drop across the baghouse shall be observed daily when operational. If the pressure drop falls outside the range listed in Condition 9.C.5.b.(ii), immediate corrective action shall be taken. [Ref: for 3BBVBH & 4BBVBH see ATC 9193 PC 5.b, for 3ASBH and 5ASBH see ATC 9551 PC 5.c, for CRVBH see ATC 9192 PC 6.b, for the GWBH see ATC 10023 PC 9.4(d), for 378BH, 5APVBH and SPVBH ATC 9696-01 see PC 5(d)].
- (ix) *Visual Emissions Monitoring for Packing Stations*: Once every calendar quarter, Celite shall take the opacity reading of the 7P, 6PS, 6AS, Jolter Bin and Silicates Plant bagging stations using USEPA Method 22 in accordance with CFR 60.675(d). [Ref ATC 9696-01 5.b(ii)]

- (x) *Source Testing* – Celite shall perform source testing of air emissions and process parameters listed in Table 9.C.11.h.3 (Source Test Requirements for Baghouses and Rotoclones) for the baghouses. Celite shall adhere to the Source Testing permit condition (9.C.11). For Baghouse 345VBH, the source testing shall be annual. For the CRVBH, the source testing shall be triennial. For the remaining baghouses, at least one device from each equipment group listed in permit Condition 9.C.11 shall be tested biennially. [Ref: 40 CFR 70.6, ATCs 8202-01 & 9192]
- (d) Recordkeeping: Celite shall keep the following records to demonstrate compliance with emission limits, operation limits and monitoring requirements above.
- (i) The tons of product bagged per day by the 3AP packing station and the 3 and 4 bulk bin stations.[Ref: For BH 345VBH see ATC 8202-01 PC 10.a, for 3BBVBH & 4BBVBH see ATC 9193 PC 6.a].
  - (ii) Whenever soda ash is delivered, Celite shall record the amount delivered, in tons and the start and stop times of each unloading event. [Ref: ATC 9156 PC 7.a & EE pg 2].
  - (iii) Baghouse Maintenance Records: Celite shall maintain Baghouse Maintenance records that include repair and maintenance for all baghouses listed in Table 9.C.5. The records shall include a malfunction summary specifying:
    - date of the malfunction
    - type of malfunction
    - action taken to remedy the malfunction
    - time taken to remedy the malfunction
- Recording this information does not fulfill breakdown reporting required by Rule 505 or 1305. [Ref: For BH 345VBH see 8202-01 PC 10.c, for 3BBVBH & 4BBVBH see ATC 9193 PC 6, for SABH see ATC 9156 PC 7.b, for 3ASBH and 5ASBH see ATC 9551 PC 6.b, for CRVBH see ATC 9192 PC 7; for 378BH, 5APVBH and SPVBH see 9696-01 PC6.b, for GWBH se ATC 10023 PC 9.5.c, 40 CFR 70.6 as to the rest]
- (iv) Pressure Drop For Baghouses 3BBVBH, 4BBVBH, 3ASBH, 5APVBH, 5ASBH, CRVBH, SPVBH, 378BH and GWBH: On a daily basis when the equipment is in use, Celite shall record whether baghouse pressure drop is within the specified operating range, to the nearest half inch of water column or equivalent gauge. The range shall be specified on the form. If the pressure drop is outside the range, the actual readings shall be recorded and all corrective actions implemented as required by Condition 9.C.5(c)(vii).  
[Ref: for 3BBVBH & 4BBVBH see ATC 9193 PC 6.b & c, for 3ASBH & 5ASBH see 9551 PC 6.d, for CRVBH see ATC 9192 PC 7.b, for 5APVBH see ATC 9616; for GWBH see ATC 10023 PC 9.5, for 378BH, 5APVBH and SPVBH see ATC 9696-01 PC 6]
  - (v) Visible Emission Observations:
    - (a) For all baghouses Celite shall record whether or not daily visible emissions are present or the date and initials of a responsible person when the baghouse is non-operational. For all enclosed baghouses, Celite shall record the following for the readings obtained by the use of USEPA Method 9 as required in Condition 9.C.5.c.(iv): date and time of reading, name of reader, most recent Method 9 certification date of reader, baghouse name, individual interval readings required by Method 9, and the final reading. [Ref: for SABH see ATC 9156 PC 7.b.1, for 3ASBH and 5ASBH see ATC 9551 PC 6.a, for 3APVBH see ATC 9616 PC 6.a.4; for CRVBH see ATC 9192 PC 7.a; for 3BBVBH & 4BBVBH see ATC 9193 PC 6.b; GWBH see ATC 10023 PC 9.5; SPVBH and 378BH see ATC 9696-01 PC9.6; 40 CFR 70.6]
    - (b) For all USEPA Method 22 inspections Celite shall record the following: date and time of reading,

name of reader, equipment item and whether fugitive emissions were observed. [Reference ATC 9696-01 5.b(ii), 40 CFR 70.6]

- (vi) Recordkeeping for Baghouses 5APVBH, 378BH, and Silicates Plant Ventilation BH: In addition to (v) above, Celite shall record the following:
  - 1) On a daily basis, when the equipment is in use:
    - a) The hours of operation of the 6P, 6PS, 6AS, 7P, jolter bin and Silicates bagging stations
    - b) The daily throughput (tons) for each equipment item listed above in 9.C.5.d.(vi)1a
  - 2) On a monthly basis, the hours of operation of the each baghouse and the total throughput in tons of packing stations 6P, 6PS, 6AS, 7P, jolter bin and silicates.
- (e) Reporting On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report must list all the data required by condition 9.C.14 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports [Re: APCD Rules 304, 311.C, and 1303, ATCs 8202-02, 9193, 9156, 9327, 9551, 40 CFR 70.6]*)

C.6 **Rotoclones.** The following equipment is included in this emissions unit category:

APCD ID #	Name
4-1	Silicates Plant Acid Wash Rotoclone, 10,000 scfm
4-2	Chromosorb Rotoclone, 10,000 scfm

- (a) Emission Limits: Mass emissions from the rotoclones listed above shall not exceed the limits listed in Table 9.C. [Ref: 304]
- (b) Operational Limits: Rotoclones shall operate at all times that the equipment served by the rotoclones is operated. [Ref: 40 CFR 70.6]
- (c) Monitoring:
  - (i) *Observation* - When operating, Celite shall perform a visual inspection of each rotoclone and rotoclone exhaust once per day. If any visible emissions are observed, corrective action shall be immediately implemented. If visible emissions are not eliminated within 24 hours, Celite shall shut down the equipment controlled by the rotoclone until corrective action that eliminates visible emissions is completed. [Ref: 40 CFR 70.6]
  - (ii) *Routine Source Testing* – Celite shall perform source testing of air emissions and process parameters listed in Table 9.C.11.h.3 (Source Test Requirements for Baghouses and Rotoclones). Celite shall have a contractor source test one rotoclone from Table 9.C.6(c) below triennially. Celite shall test each unit in the group, thereby completing a full test cycle, before any unit within that group is source tested a second time, and test each unit a second time before any unit is tested a third time, etc., except in cases where a unit can not be tested due to non-operational status. Once operation has resumed of any untested unit, this unit shall be tested during the next scheduled source test for the group. Sections (b) through (h) of Condition 9.C.11 (Source Testing) shall be adhered to. [Ref: 40 CFR 70.6]

Table 9.C.6(c). Equipment Classifications			
APCD ID #	Source ID	Description	Pollutants

Table 9.C.6(c). Equipment Classifications			
APCD ID #	Source ID	Description	Pollutants
4-1	AWR	Si. Plant Acid Wash F.A. Rotoclone	TSP
4-2	CROTO	Chromosorb Plant Rotoclone	See Table 9.C.11.h.3

- (d) **Recordkeeping:** Celite shall log malfunctions of the rotoclones and indicate the nature, date of, and duration of repair activity.
- (e) **Reporting:** On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report must list all the data required by condition 9.C.14 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*. [Re: APCD Rules 304, 1303, 40 CFR 70.6])

C.7 **Gasoline Tank.** The following equipment is included in this emissions category:

APCD ID #	Name
5-1	Gasoline tank, 10,000 gallon capacity, underground equipped with submerged fill line, Phase I and Phase II vapor recovery system and 2 nozzles.

- (a) **Emission Limits:** There are no federally enforceable emission limits for this tank.
- (b) **Operational Limits:**
- (i) **Submerged Fill:** Celite shall ensure that the gasoline tank is equipped with a permanently installed submerged fill pipe for gasoline transfer. [Ref: Rule 316.C.1]
  - (ii) **Phase I and Phase II Controls:** Celite shall ensure that the gasoline tank is equipped with permanently installed, CARB-certified Phase I and Phase II vapor recovery systems. [Ref: Rule 316.C.2 & 3]
  - (iii) **Hold-open Latch:** Celite shall ensure that the gasoline tank is equipped with nozzles that have a hold-open latch except where prohibited by local ordinance, State or federal regulation or the agency responsible for local fire control. [Ref: Rule 316.C.4]
  - (iv) **Maintenance:** Celite shall operate the tank and its control equipment as when certified by CARB. All vapor recovery equipment shall be maintained in good working order and shall be leak-free and vapor tight, except for the connection between the Phase II vapor recovery nozzle faceplate and the motor vehicle fill pipe during vehicle refueling. Celite shall not permit the use of any component of a Phase II system with a defect identified in Title 17, California Code of Regulations, Section 94006, until it has been repaired, replaced or adjusted as necessary to remove the defect. If District reinspection is required under CA Health and Safety Code Section 41960.2, use shall not be permitted until the APCD has authorized its use. [Ref 316.G.1, 2 & 4]
  - (v) **Gasoline Specifications:** Celite shall not supply for use as a fuel for motor vehicles any gasoline having a degree of unsaturation greater than that indicated by a Bromine Number of 30 as determined by ASTM Method D-1159-57T modified by the omission of the mercuric chloride catalyst. [Ref: Rule 315]

[Re: APCD Rules 316 and 1303, 40 CFR 70.6]

C.8 **Solvent Cleaning and Degreasing.** The following equipment is included in this emissions unit category:

APCD ID #	Name
6-1	Cleaning/Degreasing

- (a) **Emission Limits:** Mass emissions from the solvent usage shall not exceed the limits listed in Tables 9.C.
- (b) **Monitoring:** none
- (c) **Recordkeeping:** Celite shall record in a log the following on a quarterly basis for each solvent used: amount used; the percentage of ROC by weight ; the solvent density; amount of solvent sent to a state or federal hazardous waste treatment, storage or disposal facility as documented by state or federal hazardous waste manifest; whether the solvent is photochemically reactive; and the resulting emissions to the atmosphere in units of pounds per month and pounds per day. Product sheets (MSDS or equivalent) detailing the constituents of all solvents shall be maintained at the facility in a readily accessible location.
- (d) **Reporting:** On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report must list all the data required by condition 9.C.14 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*). [Re: APCD Rules 317, 322, 323, 324 and 1303, 40 CFR 70.6]

**C.9 Facility Throughput Limitations.** Celite shall not exceed the limits shown in the table of throughput limits below. Celite shall record in a log the volumes of wet ore feed and the actual number of days in production per month. The daily limits are based on actual days of operation during the month. The hourly throughput for the 6P, 7P, 6AS, Jolter bin and Silicates Plant packing unit will be determined by multiplying the highest number of bags packed per 2 hour period by the corresponding tons per bag and dividing by 2 hours. The maximum operating hours for the Jolter bin and Silicates stations are 24 hrs/day and 8760 hrs/yr and 24 hrs/day and 8520 hrs/yr for the 6P, 7P and 6AS stations.

**Table 9.C.9. Celite Throughput Limits (Dry unless otherwise indicated)**

ATC	Cond	Equipment Limited	Tons/hr	Tons/day	Tons/year
8202 (345BH)	1	Automatic Line 3 packing	36	864	306,720
8962	1	#5 System wet end feedrate (wet)	35.6	--	--
8962	1	#5 production rate	17.7	--	--
9156	1	Soda ash receiving & bin loading	15	--	21,900
9193	1	#3 and #4 bulk bins semi-bulk stations	8.5	204	74,460
9616-01	1	6P semi-bulk packing station on Line 6	4.75	--	--
9696-01	1	7P Packing unit	2.7	64	16,536
9696-01	1	6PS Packing unit	3.3	78	20,280
9696-01	1	6AS Packing unit	2.8	68	17,550
9696-01	1	Jolter Bin unit	3.0	72	18,720
9696-01	1	Silicates Packing unit (semi-bulk)	2.0	38	12,000

Table notes: dashes indicate no federally enforceable limits

**C.10 Diesel and Gasoline Engine NO<sub>x</sub> and Particulate Matter Maintenance Plan.** To ensure compliance with District Rules 302, 304, and 309, Celite shall implement manufacturer recommended operational and maintenance procedures to ensure that diesel-fired and gasoline-fired engines 1-01 through 1-16 minimize particulate emissions. Within 60 days of issuance of this permit, Celite shall submit a *Diesel and Gasoline Engine NO<sub>x</sub> and Particulate Matter Maintenance Plan* for APCD approval. Final plan approval shall occur within 90 days of permit issuance provided total District review time of the draft does not exceed 30 days. The plan shall detail the manufacturer recommended maintenance and calibration schedules that Celite will implement. Where manufacturer guidance is not available, the recommendations of comparable equipment manufacturers, when available, and good engineering judgment shall be utilized. Celite shall include in the plan,

all liquid fuel-fired stationary engines, regardless of exemption status. [Re: APCD Rules 205.A, 302, 304, 309, 40 CFR 70.6]

C.11 **Source Testing.** In addition to the source test requirements specified in condition 9.C.2 c (i), 9.C.3.c.(ii), 9.C.4.c (i), 9.C.5.c (x), and 9.C.6 c (ii), the following source testing provisions shall apply:

- (a) **Frequency** – Celite shall perform third party source testing of air emissions and process parameters listed in Table 9.C.11.h.1 (Source Test Requirements for ICEs), Table 9.C.11.h.2 (Source Test Requirements for External Combustion Units), and Table 9.C.11.h.3 (Source Test Requirements for Baghouses and Rotoclones). At least one item from each equipment group listed in Table 9.C.11.a shall be tested biennially.
  - (i) **Test Initiation:** The first test of equipment in Table 9.C.11.a and of the CHEAFs and #5 Venturi Scrubber shall be completed by January 2001. For these equipment items, the month when the first test is performed will establish the month when tests will be performed in future years.
  - (ii) **Test Schedule:** ICE's #8716 and #8717, Boiler #2, and the 345BH and CRVBH baghouses, shall follow the schedule specified in Tables 9.C.11.h.1, 9.C.11.h.2, and 9.C.11.h.3, respectively. The specified month of testing for the above noted equipment units may be modified if approved in advance by the APCD. If an equipment item in Table 9.C.11.a can not be tested due to non-operational status, and all operational equipment units have been tested in the group, (i.e. a cycle completed) Celite shall commence the next cycle of testing. In addition, any unit that was unable to be tested due to non-operation in the previous cycle, shall be tested within 90 days of startup.
  - (iii) **Multiple Test Substitute for Maximum Load:** When biennial testing comes up for baghouses marked with an asterisk in Table 9.C.11.a, Celite shall perform 3 source tests on 3 different days on the baghouse. All three tests shall be completed within a three month period.
  - (iv) **Coverage:** Except for the 2<sup>nd</sup> and 3<sup>rd</sup> tests required under condition 9.C.11.a.ii and in the case of non-operational equipment, Celite shall test each unit in the group listed in Table 9.C.11.a, thereby completing a full test cycle, before any unit within that group is source tested a second time, and test each unit a second time before any unit is tested a third time, etc.,.

Table 9.C.11.a. Equipment Classifications				
Group #	APCD ID	Source ID	Name	Pollutants
1	2-1	SPB1	Silicates Plant Boiler 1	See Table 9.C.11.h.2
1	3-45	SPFDBH	Silicates Plant Flash Dryer BH	See Table 9.C.11.h.2
1	3-44	SPAWBH	Silicates Plant Acid Wash Filter Aid BH	TSP
1	3-38	PPHBH	Pellet Plant Ventilation BH – Hot	TSP
4	3-9	11VBH*	11 Mill Ventilation BH	TSP
4	3-13	378BH*	378 / 3 Dry End BH	TSP
4	3-31	978BH*	978 BH	TSP
4	3-19	5APVBH*	5 Auto Packing Station BH (578)	TSP
4	3-1	516VB	516 Ventilation BH	TSP
4	3-3	6APVBH	6 Auto Packing Station BH (678)	TSP
4	3-2	616VBH	616 Ventilation BH	TSP



Table 9.C.11.a. Equipment Classifications				
Group #	APCD ID	Source ID	Name	Pollutants
4	3-49	SPVBH*	Silicates Plant Ventilation BH –packing	TSP
4	3-48	SPPBH	Silicates Plant Production BH	TSP
4	3-46	SPFMBH	Silicate Plant Feed Mix BH	TSP
5	3-41	RBH*	Recirculating System Ventilation BH	TSP
5	3-11	318BH*	318 BH	TSP
5	3-39	PSWBH*	Preseparator Waste BH	TSP
5	3-40	GWBH*	General Waste BH	TSP
5	3-52	PVBH*	Portable Ventilation BH	TSP
7	3-47	SPLTBH	Silicates Plant Lime BH	TSP
7	3-36	MPVBH	Mortar Plant Ventilation	TSP
7	3-37	PPCVBH	Pellet Plant Ventilation BH – Cold	TSP
7	3-33	CPVBH-So.*	Chromosorb Plant Ventilation BH - South	TSP
7	3-34	CPVBH-No.*	Chromosorb Plant Ventilation BH - North	TSP

Notes: \* Baghouses marked with asterisks are production rate independent (See Condition 9.C.11.a and b)

(b) Load for Source Testing:

- 1) For baghouses listed in Table 9.C.11.a and marked with asterisks: Although Celite may test these units at loads less than full capacity operation of the equipment served by the baghouse, at least some of the equipment served must be operating.
- 2) For CHEAFs and 5HEV: Although Celite may test these units at loads less than full capacity operation of the equipment served by the CHEAF or 5HEV, the furnace and kiln served by the CHEAF or 5HEV must be operating during the source test.
- 3) For Internal Combustion Engines 8716 and 8717: Each engine shall be source tested at the maximum rated heat input limit listed in 9.C.1 (b)(iv) or shall not be operated in excess of 110% of the hourly heat input at which it was source tested and found to be in compliance. This “reduced” limit shall be documented in the source test approval letter.

When tested at loads less than 90%, compliance with reduced limits shall be verified by Celite every two months. For each two month period, the total fuel burned (gal) shall be divided by the total hours operated to calculate gal/hr. This value shall be multiplied by the most current fuel higher heating value (Btu/gal) to calculate the average engine heat input (MMBtu/hr). If an engine is found to be operating in excess of a reduced limit Celite shall: (1) notify the District, in writing, within fourteen days of discovery, and (2) conduct a supplemental source test within 45 days of discovery at or above the higher engine load per the requirements of 9.C.1.(c)(ii) and Table 9.C.11.h.1.

- 4) For Boiler #2: The source test shall be performed at the maximum attainable firing rate allowed by this permit or Boiler #2 shall not be operated in excess of 110% of the hourly heat input rate at which it was source tested and found to be in compliance.

- (c) Source Test Plan: Celite shall submit a written source test plan to the District for approval at least thirty (30) calendar days prior to initiation of each source test. The source test plan shall be prepared consistent with the District's *Source Test Procedures Manual* (revised May 1990 and any subsequent revisions). Celite shall obtain written District approval of the source test plan prior to commencement of source testing. Alternative or equivalent test methods to those specified in tables 9.C.11.h.1, 9.C.11.h.2, 9.C.11.h.3 may be proposed in the test plan for APCD consideration and approval.

- (d) Source Test Notice: The District shall be notified at least ten (10) calendar days prior to the start of source testing activity to arrange for a mutually agreeable source test date when District personnel may observe the test. A source test for an item of equipment shall be performed on the scheduled day of testing (the test day mutually agreed to) unless circumstances beyond the control of the operator prevent completion of the test on the scheduled day. Such circumstances include mechanical malfunction of the equipment to be tested, malfunction of the source test equipment, delays in source test contractor arrival and/or set-up, or unsafe conditions on site. Except in cases of an emergency, the operator shall seek and obtain APCD approval before deferring or discontinuing a scheduled test, or performing maintenance on the equipment item on the scheduled test day. If the test can not be completed on the scheduled day, then the test shall be rescheduled for another time with prior authorization by the APCD. Failing to perform the source test of an equipment item on the scheduled test day without a valid reason and without APCD's prior authorization, except in the case of an emergency, shall constitute a violation of this permit. If a test is postponed due to an emergency, written documentation of the emergency event shall be submitted to the APCD by the close of the business day following the scheduled test day.
- (e) Source Test Results: Source test results shall be submitted to the District within forty-five (45) calendar days following the date of source test completion and shall be consistent with the requirements approved within the source test plan.
- (i) Source test results should be presented along with the applicable emission limits for each equipment item tested and the results in the same units as the emission standard.
  - (ii) Load Information: The source test report shall document the operational status of all equipment vented to each baghouse tested, the corresponding obtainable average throughput rates of all equipment that in any way impacts emission rates of the unit being tested or any equipment the tested unit services and the amount of soda ash added during each test run.
  - (iii) PM Extrapolation for Units Tested Below Maximum Capacity (i.e. Baghouses not asterisked in Table 9.C.11.a, 345BH, Rotoclones, CHEAFs, and 5HEV): Compliance with the hourly mass PM emission rate limits shall be determined by linear extrapolation (multiplying the average source test PM lb/day result by the ratio of maximum total throughput (tons/hr from Tables 9.C.9 and 9.D.4.a) to the average tons/hour throughput obtained during the test). If the extrapolated PM lb/hr value does not show compliance with the PM lb/hr limits in Table 9.C, the throughput limit shall be reduced, also via linear extrapolation, to the highest level that shows compliance. This extrapolation and corresponding reduced production rate limit shall be developed and listed in the source test report and shall remain in effect until a subsequent test demonstrates compliance at a higher rate. Compliance with the reduced throughput rate shall be documented by recording and reporting of the hourly throughput of the affected equipment. In no event shall the production limit be raised to a level above that which is listed in Table 9.C.9
- (f) Deadlines: Source test completion and source test results (report) submittal deadlines may be extended at the discretion of the APCD upon written request of Celite. The written request must contain the rationale for the extension and must be submitted to the APCD at least fourteen days prior to the applicable deadline.

**TABLE 9.C.11.h.1 Source Test Requirements for IC Engines**

<u>Emission Points</u>	<u>Pollutants/ Parameters</u>	<u>Test Methods</u>
<ul style="list-style-type: none"> <li>• ICE 8716</li> <li>• ICE 8717</li> </ul>	NO <sub>x</sub> (ppmv, lb/hr)	CARB 1-100 or USEPA 7E
	Fuel Flow Rate (gal/hr)	Meter calibrated within 60 days of test or alternative in the form of a graduated cylinder tank or alternative measuring system approved by the District.
	Fuel High Heating Value	ASTM D2352-88 or ASTM D240-87
	Fuel Injector Timing (Degrees BTDC <sup>f</sup> )	Verification by inspector pump and timing gear cover
	Total Fuel Sulfur Content	Supplier certification or sample analysis

**Site Specific Requirements**

- a. Run Number and Duration: All NO<sub>x</sub> emissions tests to consist of three 40-minute runs.
- b. Test Load: See Condition 9.C.11.
- c. USEPA Method 19 shall be used to determine stack flow rate.
- d. SO<sub>x</sub> determination: SO<sub>x</sub> emissions to be determined by mass balance calculation.
- e. Test frequency and schedule: ICEs 8716 and 8717 shall be tested biennially. For ICE 8716, tests are due in November 2000, November 2002, etc. For ICE 8717, tests are due in July 2001, July 2003, etc. If an ICE fails a biennial test, it shall be tested again within a time period specified by the APCD, then annually until 2 consecutive tests demonstrate compliance with its permitted emission limits. (Initial test dates for ICEs 8716 and 8717 are 11-19-1992 and 7-28-1993, respectively.
- f. BTDC means before top dead center

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**TABLE 9.C.11.h.2 Source Test Requirements for External Combustion Units**

<u>Emission Points</u>	<u>Pollutants/ Parameters</u>	<u>Units</u>	<u>Test Methods</u>
<ul style="list-style-type: none"><li>• Boiler #1(NO<sub>x</sub> only)</li><li>• Boiler #2 (NO<sub>x</sub> and CO)</li><li>• Si. Plant Conveyor Dryer (NO<sub>x</sub> and SO<sub>x</sub> only)</li><li>• #3 CHEAF</li><li>• #5 Venturi Scrubber</li><li>• #6 CHEAF</li><li>• #7 CHEAF</li><li>• #11 CHEAF</li><li>• Si. Plant Flash Dryer BH (PM only)</li></ul>	NO <sub>x</sub>	ppmv & lb/hr	USEPA 7E & 2&4 or 19
	CO	ppmv & lb/hr	USEPA 10
	ROC	ppmv & lb/hr	USEPA 18
	SO <sub>x</sub>	ppmv & lb/hr	USEPA Method 6
	PM	ppmv & lb/hr	USEPA Method 5
	Fuel flow rate	gal/hr	Meter calibrated within 60 days of test
	Fuel high heating value	Btu/scf or Btu/gal	ASTM D1826-88
	Total fuel sulfur content	gas: ppmv oil: % by wt.	ASTM D1072 or supplier certification supplier certification for fuel oil #6
	Wet ore feed rate*	tons/hr	APCD-approved method
	DE sulfur content*	% by wt.	Sample at crude bin discharge
	Pressure drop across device	inches of H <sub>2</sub> O	gauge or manometer Baghouses and CHEAFs only

\* The CHEAFs & #5 Venturi Scrubber shall be tested for all pollutants listed above.

#### Site Specific Requirements

- Run Number and Duration: For NO<sub>x</sub>, CO and O<sub>2</sub>, tests to consist of a minimum of three 40-minute runs with a strip chart recorder. An ROC sample shall be taken for each run over a minimum of 5 minutes
- USEPA Methods 1-4 to be used to determine sampling traverses and points, stack temperature and flow rate, O<sub>2</sub>, dry MW, CO<sub>2</sub>, and moisture content. Alternatively, USEPA 19 may be used to determine stack flow rate.
- SO<sub>x</sub> determination: SO<sub>x</sub> emissions for the Boilers and the Silicates Plant Conveyor Dryer BH may be determined by mass balance calculation rather than stack sampling.
- Test frequency: Annually for the CHEAFs and the #5 Venturi Scrubber. Biennially for Boiler #2 by April 1 and silicates plant conveyor dryer as noted in sections 9.C.2 and 9.C.3 (monitoring). If Boiler #2 fails a biennial test, it shall be tested again within a time period specified by the APCD, then annually until 2 consecutive tests demonstrate compliance with its permitted emission limits.
- Applicable ROC and CO limits in 9.D (non-fed enforceable).

**TABLE 9.C.11.h.3 Source Test Requirements for Baghouses and Rotoclones**

<u>Emission Points</u>	<u>Pollutants/ Parameters</u>	<u>Units</u>	<u>Test Methods</u>
<ul style="list-style-type: none"> <li>• Baghouses</li> <li>• Rotoclones</li> </ul>	PM	ppmv & lb/hr	USEPA Method 5
	ROC <sup>1</sup>	ppm & lb/hr	USEPA Method 18
	Hydrochloric Acid <sup>1</sup>	ppm & lb/hr	USEPA Method 26 or equivalent
	Sulfuric Acid <sup>1</sup>	ppm & lb/hr	USEPA Method 8 or equivalent
	Material feed rate	tons/hr	APCD-approved method
	Pressure Drop across device (BHs only)	inches of water	Calibrated pressure gauge, manometer, or other APCD approved device
	Compressed air manifold pressure <sup>2</sup>	lb/in <sup>2</sup>	Pressure gauge
	Styrene and Toluene usage <sup>3</sup>	gallons/batch	APCD-approved measurement method

**Site Specific Requirements**

- Test Load: See Condition 9.C.11.
- USEPA Methods 1-4 to be used to determine sampling traverses and points, stack temperature, stack flow rate, O<sub>2</sub>, dry MW, CO<sub>2</sub>, and moisture content. Alternatively, USEPA 19 may be used to determine stack flow rate.
- Test frequency: 345BH and CRVBH are to be tested annually and triennially, respectively, by April 1. All other baghouses shall be tested at the frequency indicated in permit condition 9.C.11. Each rotoclone shall be tested every 6 years in accordance with the frequency indicated in permit condition 9.C.6(c).

Footnotes: <sup>1</sup> ROC and Hydrochloric Acid for CROTO rotoclone. PM and H<sub>2</sub>SO<sub>4</sub> for Acid Wash Rotoclone.

<sup>2</sup> Compressed air pressure at compressed air manifold for pulse-cleaned baghouses only (see Attachment 10.6 for listing of pulse-jet cleaned baghouses)

<sup>3</sup> CROTO only

- C.12. **Fugitive Dust Monitoring.** “Offsite Fugitive Emissions” shall be defined as visible fugitive emissions from Celite’s operations that cross or have the imminent potential to cross Celite property boundaries and enter adjacent lands not owned or operated by Celite.

*Visual Survey.* During mining operations, Celite shall conduct a visual survey in the mining area for a minimum of 20 minutes each day to identify any Offsite Fugitive Emissions. During daylight hours, when wind speeds measured by Celite’s on site monitor exceed 20 miles per hour, Celite shall conduct a visual survey once every two hours until two consecutive hours of wind alarm data show no occurrences of wind speeds over the 20 mph threshold. Visual surveys shall not be required on days which receive (or on the day immediately following any day which receives) at least 1/4 inch of precipitation. Precipitation data will be obtained from Celite’s on site rain gauge (or the Santa Barbara County Flood Control District’s “Miguelito Debris Basin” rain gauge if Celite’s is inoperable).

*Wind Speed and Direction Monitor.* Celite shall maintain a wind speed and direction monitor and recorder in continuous operation, except while the monitor is being calibrated. The monitor shall be calibrated at least every six months in accordance with manufacturers recommended procedures. A malfunctioning/inoperable monitor shall be repaired or replaced as soon as practicable. During any period that the monitor is inoperable, Celite shall conduct a 20-minute visual survey twice per shift each day until the monitor is back in service.

*Daily Monitor Operation Check.* Celite shall check the wind speed and direction monitor daily during mining operations to verify its operating condition. Celite shall notify the APCD (via fax or E-mail) of any monitor malfunction before the end of the next business day after the malfunction. No monitor or recorder failure shall constitute a permit violation provided that Celite maintains a record of the failure (description, time and date) and notifies the APCD as specified above.

*Alarm System.* Celite shall operate and maintain a visual and/or audio alarm system designed to instantaneously notify the control person when wind conditions in the quarry exceed 20 mph (averaged over 15 seconds). During scheduled Celite Holidays (when a control person is not on duty), the front gate security personnel will perform a five-minute visual survey twice per shift during daylight hours.

*Corrective Action.* Corrective action shall be promptly taken if Offsite Fugitive Emissions are identified by Celite visual surveys, or by APCD inspectors. If Offsite Fugitive Emissions are identified and reported by a member of the public directly to Celite (or to Celite via the APCD), the incident will be investigated. If Offsite Fugitive Emissions are verified, corrective actions will be initiated. Corrective action shall at a minimum consist of a cessation of those mining operations determined by Celite to be causing the Offsite Fugitive Emissions until water has been applied in sufficient amounts by Celite water trucks (or other similar watering equipment) to road and quarry surfaces to mitigate to the maximum extent feasible Offsite Fugitive Emissions. Watering and other corrective actions initiated by Celite may be discontinued as soon as Offsite Fugitive Emissions have ceased. When Offsite Fugitive Emissions are obviously transient in nature (i.e., generated by mobile equipment not engaged in mining activities) and have ceased within ten minutes, no corrective action is required.

Celite shall have a written procedure in place within seven days of the final permit issuance date that covers all aspects of this condition. The Plant Manager shall be responsible for overall implementation, including corrective action, and shall review applicable portions of this procedure with individual staff members that have a role in the implementation.

*Recordkeeping.* The following records shall be maintained.

- (a) Each day during mining operations, Celite shall record the total hours that any water application occurred.
- (b) Celite shall maintain strip charts of wind speed and direction and written records of monitor calibrations, maintenance work and breakdowns. Records shall include dates, times, descriptions of events and the initials of the responsible personnel.
- (c) Celite personnel shall initial the strip chart record of the wind speed and direction monitor daily to confirm verification of the monitor’s operation.

(d) Celite shall maintain records of alarm events, except during scheduled Celite Holidays if no control person is on duty. During scheduled Celite Holidays, if no control person is on duty, the front gate security personnel shall initiate and record corrective actions if necessary. Records shall include date and time of alarm, initials of response personnel, and description of conditions. When corrective action is required Celite shall record the start and end times of corrective action and the type(s) of corrective action taken.

(e) Documentation of daily visual surveys

- C.13. **Emissions Monitoring.** Celite shall monitor the hourly SOx emissions from the #3, #5, #6 and #7 system CHEAFS and the Venturi Scrubber consistent with the District-approved SOx Compliance Monitoring Protocol and any subsequent APCD-approved updates thereto. A copy of the protocol is provided in Attachment 10.7 and is hereby incorporated by reference as an enforceable part of this permit. All SOx monitoring and SOx Protocol requirements shall be implemented within 30 days of permit issuance.

Celite shall collect daily crude samples for each crude type in use and analyze each sample for percent sulfur and percent moisture. The sample collection and analysis shall be in accordance with the procedures specified in the SOx Compliance Monitoring Protocol.

Emissions for each system shall be computed and monitored by plant computer software and provide the real-time hourly emission rate for each system. At any time emissions from any system exceed the hourly emission rate (based on the hourly crude feed rate for one second) immediate actions shall be implemented to reduce emissions. Such actions shall consist of adjusting the product inlet feed rate until the hourly emission rate (based on the hourly crude feed rate for one second) falls below the permitted limit. An alarm shall be installed to notify plant operators when such an exceedance occurs. An exceedance of the Table 9.C SOx hourly emission limits (based on the average of 3600 consecutive one-second hourly emission rates) as reported by procedures set forth in the Protocol shall constitute a violation of this permit.

Celite shall maintain, on a per system basis, a 90% data recovery efficiency (DRE) for hourly emissions reporting. DRE is defined as the total number of hours for which hourly emissions were reported using the sulfur concentrations analyzed by the Celite lab and feed rates as reported by the gamma radiation scales divided by the total hours in the quarter in which SOx emissions were emitted from that system. Any sample concentration analysis that is delayed more than 36 hours after sample collection due to Celite lab downtime shall be considered a missed sample for the purposes of calculating the DRE. The DRE shall be calculated on a calendar quarter basis.

For days in which samples are not analyzed by Celite, the highest sampled bin sulfur concentration from the most recent thirty days shall be used as the daily sampling result, i.e., the highest bin sulfur concentration per active glory hole/blend pile shall be used and included in the average sulfur concentration and the standard deviation until these analyses are available to be incorporated into these calculations. [Emissions calculations per the Protocol shall continue to be performed with this data until sampling/analysis can be resumed, and will be used for assessing compliance with the applicable emission limits.](#)

Within 60 days of the issuance of this permit Celite shall provide, in electronic format, one hour's data necessary to demonstrate the accuracy of the protocol calculation methodology, i.e., the one second feed rates, average sulfur concentration and standard deviation data, corresponding emission rates, the emission rate for the hour and, if available, supporting strip chart data.

Celite shall make assessable to the public via the world wide web, the real-time hourly SOx emissions data from each of the five systems listed above. The web page and data shall be available within 60 days of final issuance of this permit. Celite shall notify the APCD of the specific website address.

- C.14 **Semi-Annual Monitoring/Compliance Verification Reports.** Celite shall submit a report to the APCD every six months to verify compliance with the emission limits and other requirements of section C. The reporting

periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1 and March 1, respectively, each year, and shall be in a format approved by the APCD. All records and other supporting information not included in the report shall be available to the District upon request. "Supporting information" includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all logs and reports required by the permit. The second report shall include a summary of quarterly values for the half year being reported along with the yearly total for any reporting item below that requires a value or a sum over a year. The report shall include the following information:

(a) *Internal Combustion Engine*

- (i) Monthly and annual fuel usage in units of gallons for ICEs 8716 and 8717. Monthly and annual fuel usage in units of MMBtu for ICEs 8113, 8115 and 8700. [Ref: Rule 333, ATC 8945 PC 11.b, 40 CFR 70.6]
- (ii) The monthly and annual hours of operation for IC engines 8115, 8700, 8113, 8716 and 8717 (by ID number). [Ref: Rule 333, ATC 8945 PC 11.c, ATC 8822-01, 40 CFR 70.6]
- (iii) The sulfur content by complying with 9.B.8. On an annual basis, the heating value of the diesel fuel and gasoline (Btu/gal) shall be recorded. The vendor certification or bill of lading shall be maintained and made available for District inspection. [Ref: Rule 333, ATC 8945 PC 11.e&f, 40 CFR 70.6]
- (iv) For IC engines 8716 and 8717, IC engine operations logs, including quarterly inspection results, consistent with the requirements of Rule 333.H. [Ref: Rule 333, ATC 8945-01 PC 11.a]
- (v) If an operator's tag number is used in lieu of an IC engine identification plate, documentation which references the operator's unique IC engine ID number to a list containing the make, model, serial number, rated maximum BHP and the corresponding RPM. [Ref: Rule 333, ATC 8945 PC 11.h]

(b) *Combustion Equipment - Boilers*

- (i) *Fuel Volumes* – The monthly and annual usage of each fuel. [Ref 342.I.1, ATC 9240-02 PC 12.a and b]
- (ii) *Fuel Higher Heating Value* - Obtain the higher heating value of each fuel in accordance with 9.B.8 [Ref 342.I.1]
- (iii) *Fuel Oil #6 Usage and Sulfur Content/Natural Gas Sulfur Content* – For Boiler #2, total monthly fuel use (#6 fuel oil). Use of fuel during any recording period will be considered as two hours of fuel use. Documentation of the sulfur content shall be in accordance with 9.B.8.[Ref ATC 9240-02 PC 4 & 5]
- (iv) *#6 Fuel Oil-fired Hours* - For Boiler #2, Celite shall record the hours of operation of the boiler while burning fuel oil #6 under the exemption under Rule 342 (natural gas curtailment) and equipment testing. [Ref: 342.I.2, ATC 9240-02 PC 12.c]
- (v) *Tune-ups* – For Boiler #1, Celite shall maintain documentation that verifies that the tune-ups required by Condition 9.C.2.(b) were performed.

(c) *Combustion Equipment - Silicates Dryers and Oil Heater External Combustion Units*

- (i) *Burner Maintenance* - Celite shall record the dates that burners are cleaned and/or adjusted.
- (ii) *Fuel Sulfur Content* - Celite shall maintain the documentation required by 9.B.8 for fuel oil. [Ref: 40 CFR 70.6].

(d) *Combustion Equipment - Kilns and Furnaces of Lines 3, 5, 6, 7 and 11*



- (i) *Heat Input Tracking* – For each furnace and kiln, Celite shall record monthly the peak heat input per hour in MMBtu/hr [Ref CFR 70.6]
- (ii) *Fuel Higher Heating Value* - For the fuel burned by the furnaces and kilns of Lines 3, 5, 6 and 7, Celite shall record the higher heating value of each fuel. [Ref ATC 9353 PC 11, ATC 9367 PC 10]
- (iii) *Sulfur Content of Liquid Fuel* - For the fuel oil burned by the furnaces and kilns of Lines 3, 5, 6 and 7, #6 fuel oil usage on a monthly basis. Documentation of the sulfur content shall be maintained in accordance with 9.B.8. [Ref ATC 9353 PC 11, ATC 9367 PC 10]
- (iv) *Fuel Sulfur Content for Line 11 Furnaces (2-15 and 2-16)* - Celite shall maintain records of fuel sulfur content in accordance with 9.B.8. [Ref: 40 CFR 70.6].
- (iv) *Diatomaceous Earth Sulfur Content* - For DE processed in the furnaces and kilns of Lines 3, 5, 6 and 7, total sulfur results shall be recorded as percent by weight. Celite shall also report for each sample the amount of soda ash being added during sampling and the difference between the inlet and outlet samples. [Ref: ATC 9353 PC 7, ATC 9367 PC 7]
- (v) *Visible Emission Observations*: For all CHEAFs and the HEV, Celite shall record the following for the readings obtained by the use of USEPA Method 9 as required in Condition 9.C.4.c. (vii): date of reading, name of reader, most recent Method 9 certification date of reader, individual interval readings required by Method 9, and the final reading. [Ref: 40 CFR 70.6]

(e) *Baghouses.*

- (i) For each month, the peak day per month (tons/day) of product bagged by the 3AP packing station and the 3 and 4 bulk bin stations. [Ref: For BH 345VBH see ATC 8202-01 PC 10.a, for 3BBVBH & 4BBVBH see ATC 9193 PC 6.a].
- (ii) The monthly amount of soda ash delivered, in tons, and the peak operating hours/month. [Ref: ATC 9156 PC 7.a & EE pg 2].

Recording this information does not fulfill breakdown reporting required by Rule 505 or 1305. [Ref: For BH 345VBH see 8202-01 PC 10.c, for 3BBVBH & 4BBVBH see ATC 9193 PC 6, for SABH see ATC 9156 PC 7.b, for 3ASBH and 5ASBH see ATC 9551 PC 6.b, for CRVBH see ATC 9192 PC 7; for 378BH, 5APVBH and SPVBH see 9696-01 PC 6.b, for GWBH see ATC 10023 PC 9.5.c, 40 CFR 70.6 as to the rest]

- (iv) *Pressure Drop For Baggouses 3BBVBH, 4BBVBH, 3ASBH, 5APVBH, 5ASBH, CRVBH, SPVBH, 378BH and GWBH*: The days the pressure drop is outside the range, the range, the actual readings and all corrective actions implemented as required by Condition 9.C.5(c)(vii). [Ref: for 3BBVBH & 4BBVBH see ATC 9193 PC 6.b & c, for 3ASBH & 5ASBH see 9551 PC 6.d, for CRVBH see ATC 9192 PC 7.b, for 5APVBH see ATC 9616; for GWBH see ATC 10023 PC 9.5, for 378BH, 5APVBH and SPVBH see ATC 9696-01 PC 6]
- (v) *Visible Emission Observations*:
  - (a) For all baghouses, whether or not daily visible emissions are present. For all enclosed baghouses, the readings obtained by the use of USEPA Method 9 as required in Condition 9.C.5.c.(iv), i.e., date and time of reading, name of reader, most recent Method 9 certification date of reader, baghouse name, individual interval readings required by Method 9, and the final reading. [Ref: for SABH see ATC 9156 PC 7.b.1, for 3ASBH and 5ASBH see ATC 9551 PC 6.a, for 3APVBH see ATC 9616 PC 6.a.4; for CRVBH see ATC 9192 PC 7.a; for 3BBVBH & 4BBVBH see ATC 9193 PC 6.b; GWBH see ATC 10023 PC 9.5; SPVBH and 378BH see ATC 9696-01 PC 9.6; 40 CFR 70.6]
  - (b) For all USEPA Method 22 inspections Celite shall record the following: date and time of reading,

name of reader, equipment item and whether fugitive emissions were observed. [Reference ATC 9696-01 5.b(ii), 40 CFR 70.6]

- (vi) For Baghouses 5APVBH, 378BH, and Silicates Plant Ventilation BH: In addition to (v) above, Celite shall report the following:
- a) On a monthly basis, the hours of operation of the each baghouse and the total throughput in tons of each packing station (6P, 6PS, 6AS, 7P, Jolter Bin and silicate plant semi-bulk).
- (f) *Rotoclones:* Celite shall log malfunctions of the rotoclones and indicate the nature, date of, and duration of repair activity.
- (g) *Solvent Usage:* Celite shall report in a log the following on a quarterly basis for each solvent used: amount used; the percentage of ROC by weight (as applied); the solvent density; amount of solvent sent to a state or federal hazardous waste treatment, storage or disposal facility as documented by state or federal hazardous waste manifest; whether the solvent is photochemically reactive; and the resulting emissions to the atmosphere in units of pounds per month and pounds per day. Product sheets (MSDS or equivalent) detailing the constituents of all solvents shall be maintained at the facility in a readily accessible location.
- (h) *Facility Throughputs:*
- (a) Monthly summaries of the peak throughputs of the following equipment (tons/day except where noted otherwise):
    - Automatic Line 3 (3AP) packing (dry)
    - #5 System wet end feedrate (wet tons/hr)
    - #5 production rate (dry tons/hr)
    - 6P semi-bulk packing station on Line 6 (dry tons/hr)
    - #3 and #4 bulk bin semi-bulk units
    - 7P semi-bulk
    - 6PS semi-bulk
    - 6AS semi-bulk
    - Jolter bin
    - Silicates Plant semi-bulk packing station
- (i) *Fugitive Dust Monitoring.* Records of alarm events, except during scheduled Celite Holidays if no control person is on duty. Records shall include date and time of alarm, initials of response personnel, and description of conditions. When corrective action is required, the start and end times of corrective action and the type(s) of corrective action taken.
- (j) *SOx Compliance Monitoring Protocol.*
- (a) on a weekly basis, the highest hourly emission rate for each system and the associated sulfur concentrations and feed rates for each bin.
  - (b) the date, time, duration, magnitude, system identification, and action taken for all exceedances of system emission limits for the equipment subject to the protocol.
  - (c) the hourly emissions data recovery efficiency (DRE) for each system where the DRE is the total number of hours for which emissions were reported (using the protocol. procedures) divided by the total system operating hours. The DRE shall be calculated separately for the first ninety days and second ninety days of the reporting period.
  - (d) Celite lab downtime and number and identification of all samples analyzed by an outside lab and the name of the lab.
  - (e) the date and time of all periods in which hourly data was not transmitted to the world wide web.
  - (f) the date, time, duration and system identification for all crude weight scale downtime.

(g) the date and results of all quality control sulfur sampling.

**Insert page 1 of Table 9.C**

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**Insert page 2 of Table 9.C**

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## 9.D APCD-Only Conditions

The following section lists permit conditions that are not enforceable by the USEPA or the public. However, these conditions are enforceable by the APCD and the State of California. These conditions are issued pursuant to APCD Rule 206 (*Conditional Approval of Authority to Construct or Permit to Operate*), which states that the Control Officer may issue an operating permit subject to specified conditions. Permit conditions have been determined as being necessary for this permit to ensure that operation of the facility complies with all applicable local and state air quality rules, regulations and laws. Failure to comply with any condition specified pursuant to the provisions of Rule 206 shall be a violation of that rule, this permit, as well as any applicable section of the California Health & Safety Code.

D.1 **IC Engines.** The following equipment is included in this emissions unit category:

APCD ID #	Name
1-01	ICE 8113, gasoline-fired, 49 bhp, 2080 hr/yr, air compressor drive
1-02	ICE 8700, gasoline-fired, 49 bhp, 2080 hr/yr, air blower drive
1-03	ICE 8771, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-04	ICE 8776, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-05	ICE 8778, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-06	ICE 8780, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-07	ICE 8786, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-08	ICE 8795, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-09	ICE 8797, gasoline-fired, 43 bhp, 8760 hr/yr, air blower drive
1-10	ICE 8706, gasoline-fired, 30 bhp, 8760 hr/yr, air compressor drive
1-11	ICE 8700-1, gasoline-fired, 39 bhp, 8760 hr/yr, welder drive
1-12	ICE 8700-2, gasoline-fired, 39 bhp, 8760 hr/yr, welder drive
1-13	ICE 8102, diesel-fired, 44 bhp, 8760 hr/yr, water pump drive
1-14	ICE 8115, diesel-fired, 58 bhp, 199 hr/yr, air compressor drive
1-15	ICE 8716, diesel-fired, 80 bhp, 2080 hr/yr, air compressor drive
1-16	ICE 8717, diesel-fired, 80 bhp, 2080 hr/yr, air compressor drive

- (a) **Fuel Type:** For each ICE, only the fuel listed for that ICE in the table above shall be burned in the ICE. In addition, gasoline fired ICEs shall be fired only on gasoline dispensed on site from the tank with APCD Equipment Item Number 5-1 (see Condition 9.D.6). This gasoline shall not exceed the total sulfur content requirements of retail grade gasoline set forth in California Code, Title 17 Section 2252, i.e., 300 ppm by weight maximum.
- (b) **Hour Meters:** The hour meter required for ICE 8115 by Condition 9.C.1.c.v shall be non-resettable. [Ref: PTO 8945 PC 9]

D.2 **Combustion Equipment – Boilers.** The following equipment is included in this emissions unit category:

APCD ID #	Name
2-1	Silicates Boiler #1, 15.5 MMBtu/hr, PUC gas or #6 fuel oil-fired
2-2	Silicates Boiler #2, 23 MMBtu/hr, PUC gas or #6 fuel oil-fired, low-NOx burner

- (a) Emission Limits - Mass emissions from the boilers listed above shall not exceed the limits listed in Table 9.D.
- (b) PUC Natural Gas Curtailment - Celite shall use PUC-quality natural gas at all times in Boiler #1 when it is in operation except during periods of natural gas curtailment as imposed by the gas utility. In such a case, fuel oil #6 may be used so long as the total annual time for each boiler operating on fuel oil is less than 168 hours per year, excluding equipment testing time not exceeding 24 hours per year. [PTO 9240-02 PC 12]
- (c) Ban on Simultaneous Operation - At no time shall Boiler #1 and Boiler #2 be operated simultaneously. [Ref PTO 9240 PC 3]
- (d) Heat Input Limits - Celite shall not operate the boilers at heat inputs exceeding the values listed below. [PTO 9240 PC 1]

Equipment Name	Fuel	Hourly Heat Input (in MMBtu/hr)	Annual Heat Input (in MMBtu/yr)
Boiler #1	PUC natural gas	15.5	8,999 - D <sub>Btu</sub>
Boiler #1	Fuel oil #6	15.5	2976
Boiler #2	PUC natural gas	23	195,960 - D <sub>Btu</sub>
Boiler #2	Fuel oil #6	23	4416

Notes: D<sub>Btu</sub> means the annual amount of heat input due to the combustion of fuel oil #6.  
Fuel heat contents are as follows: 1050 Btu/scf of PUC natural gas, 150,000 Btu/gal of #6 oil unless otherwise designated by the APCO.

- (e) Fuel Gas Sulfur and Hydrogen Sulfide Limits - For Boiler #1, the total sulfur and hydrogen sulfide contents of the natural gas combusted shall not exceed 80 ppmv and 4 ppmv, respectively, calculated as hydrogen sulfide at standard conditions. Celite shall demonstrate compliance with gas analyses provided by the natural gas utility. [Ref PTO 9240 PC 4]
- (f) Gaseous Fuel Metering - For Boiler #1, Celite shall operate dedicated pressure corrected gaseous fuel meters for each boiler subject to this permit. [PTO 9240 PC 10]
- (g) Liquid Fuel Metering- For Boiler #1, Celite shall operate dedicated fuel use totalizers capable of recording gallons of liquid fuel used during each two hour period for each of the boilers subject to this permit. [PTO 9240 PC 11]
- (h) Recordkeeping: Celite shall maintain the following records for the boilers:
- (i) *Fuel Volumes* – For Boiler #1, Celite shall keep fuel use totalizer recording charts and record monthly usage by each boiler of each fuel. [PTO 9240 PC 11 & 13]
  - (ii) *Sulfur Content* – For Boiler # 1, Celite shall maintain documentation of the fuel sulfur content in accordance with 9.B.8. [Ref PTO 9240 PC 5 & 6]
  - (iii) *Hours of Operation* For Boiler 1, Celite shall record the hours of operation of each boiler while burning fuel oil #6. For Boiler #1, Celite shall record in a log each usage of #6 fuel oil and shall ensure that the totalizer records the hours of operation on #6 fuel oil under the Rule 342 natural gas curtailment exemption and separately as equipment testing hours. [Ref: PTO 9240 PC 13.c]
  - (iv) *Maintenance Logs* – Celite shall maintain maintenance logs for Boiler #1 and the Boiler #1 fuel flow meter. [Ref: PTO 9240PC 13.d]

**D.3 Combustion Equipment – Silicates and Oil Heater External Combustion Units.** The following equipment is included in this emissions unit category:

APCD ID #	Name
2-3	Silicates Conveyor Dryer, 56.3 MMBtu/hr, PUC gas fired
2-4	Silicates Flash Dryer, 17.5 MMBtu/hr, PUC gas fired
2-5	Fuel oil heater, 2.5 MMBtu/hr, diesel or PUC gas fired

- (a) Emission Limits: There are no emission limits beyond the federally enforceable ones.
- (b) Fuel Usage Content - Celite shall record usage of diesel on a daily basis and shall verify fuel sulfur content in accordance with 9.B.8. [Ref PTO 5840 PC 3.2.3]



D.4 **Combustion Equipment – Kilns and Furnaces of Lines 3, 5, 6, 7 and 11.** The following equipment is included in this emissions unit category:

APCD ID #	Name
2-7	Line 3 Kiln, 56.25 MMBtu/hr, PUC gas or #6 residual fuel oil-fired
2-8	Line 3 Furnace, 45 MMBtu/hr, PUC gas or #6 residual fuel -fired
2-9	Line 5 Kiln, 43.75 MMBtu/hr, PUC gas or #6 residual fuel oil-fired
2-10	Line 5 Furnace, 45 MMBtu/hr, PUC gas or #6 residual fuel -fired
2-11	Line 6 Kiln, 50 MMBtu/hr, PUC gas or #6 residual fuel oil-fired
2-12	Line 6 Furnace, 45 MMBtu/hr, PUC gas or #6 residual fuel -fired
2-13	Line 7 Kiln, 50 MMBtu/hr, PUC gas or #6 residual fuel oil-fired
2-14	Line 7 Furnace, 45 MMBtu/hr, PUC gas or #6 residual fuel -fired
2-15	Line 11 Furnace, 45 MMBtu/hr, PUC gas or #6 residual fuel oil-fired
2-16	Line 11 Furnace, 45 MMBtu/hr, PUC gas or #6 residual fuel -fired

- (a) **Emission Limits:** Mass emissions of NO<sub>x</sub>, ROC and CO from the kiln and furnace listed above shall not exceed the limits listed in Table 9.D; however, Celite shall not be deemed to be in violation of this condition even if such emission limits are exceeded, so long as:
- i) this equipment operates at or below its maximum design feed rate, and
  - ii) emission limits established by prohibitory rule are not exceeded.

**Table 9.D.4.a. Kiln and Furnace Throughput Triggers for Emission Limits**

Line	Equipment Affected by ID number	Maximum design feed rate (wet) (in tons/hr)
3	2-7 and 2-8	36.6
5	2-9 and 2-10	35.6
6	2-11 and 2-12	37.9
7	2-13 and 2-14	37.9

- (b) **Monitoring:** The following monitoring conditions apply to the kilns and furnaces:
- (i) **Feedrate Tracking** - Celite shall determine the peak daily wet feed rate of each of Lines 3, 5, 6 and 7 for each month by dividing the total wet DE feed for the peak day of each month (in tons) by the total hours of operation on the peak day for the month. For System 5, Celite shall determine the daily peak dry production rate for each month by dividing the total dry DE feed for the peak day of each month (in tons) by the total hours of operation on the peak day for the month [Ref: PTO 5840 3.2.1]
  - (ii) **Fuel Use** - Celite shall determine the amount of fuel used each month by each furnace of Line #11. [Ref: PTO 5840 3.2.3]
  - (iii) **Sulfur Content of DE** - For Line 11, once every calendar quarter, Celite shall obtain measurements of the total sulfur content of the DE before the furnace and after the kiln. This analysis shall be done in accordance with ASTM D-5016-89 or an equivalent reference method that has been previously approved for this purpose in writing by the APCD.

- (iv) *Hours of Operation* – For Line 11, Celite shall record the number of hours of operation on the peak DE feed throughput day for each month. For the purposes of this section, a Line is operating when any kiln or furnace burner is firing fuel. [Ref: 40 CFR 70.6]
- (c) Recordkeeping: Celite shall maintain the following record for the kilns and furnaces:
  - (i) *Feedrate*: Celite shall record, for each Line, the total “wet” DE feedrate on the peak day each month, the total hours of operation on the peak day for the month, and the peak hourly feed rate required by Condition 9.D.4.b.i above. For system 5, Celite shall also record the total dry production rate on the peak day each month, the total hours of operation on the peak day for the month, and the peak hourly feed rate required by Condition 9.D.4.b.i above. [Ref: PTO 9367 PC 7.c]
  - (ii) *Fuel Volumes* – For the fuel burned by the furnaces and kilns of Lines 3, 5, 6, 7, and 11, Celite shall record monthly fuel use in standard cubic feet for gas and in gallons for liquid fuel. [Ref: PTO 5840 PC 3.2.3]
  - (iii) *Sulfur Content of Liquid Fuel* - Celite shall verify fuel sulfur content in accordance with 9.B.8. [Ref 40 CFR 70.6]
  - (iv) *Diatomaceous Earth Sulfur Content*– For each line, once every calendar quarter, Celite shall record the results of the measurements of the total sulfur content of the DE before the furnace and after the kiln. For Line 11, the samples shall be taken before the first furnace and after the second furnace. Total sulfur results shall be reported as percent by weight. Celite shall also report for each sample the location and amount of soda ash being added during sampling and the difference between the inlet and outlet samples. [Ref: PTO 9353 PC 7, PTO 9367 PC 6, 40 CFR 70.6]

D.5 **Baghouses.** The following equipment is included in this emissions unit category:

- (a) Emission Limits: For the baghouses listed in the table below, emissions shall not exceed the limits listed in Table 9.C. In addition, the following specific emission limits apply:
  - (i) Concentration Limits : Controlled emissions of particulate matter from each baghouse shall not exceed the exhaust concentration limit listed for it in the table below. Compliance shall be based on inspections and source testing according to Table 9.C.11.h.3 and Section (c) below. [Ref: see last column of table]

**Table 9.D.5.a.i. Stack Concentration and Flow Limits**

APCD ID #	Source ID	Baghouse Name	PM <sub>10</sub> Limit in gr/dscf	Flow in dscfm	Reference
3-14	3BBVBH	#3 Bulk Bin Ventilation baghouse	See 9.C.5.a	3,200	PTO 9193
3-17	4BBVBH	#4 Bulk Bin Ventilation baghouse	See 9.C.5.a	3,200	PTO 9193

- (b) Operational Limits: The air flow rates specified in Table 9.D.5.a.i. above shall not be exceeded.

D.6 **Tank.** The following equipment is included in this emissions category:

APCD ID #	Name
5-1	Gasoline tank, 10,000 gallon capacity, underground equipped with submerged fill line, Phase I and Phase II vapor recovery system and 2 nozzles.

- (a) Emission Limits: Mass emissions from the gasoline dispensing operation shall not exceed the limits listed in Table 9.D. [Ref: PTO 8165 PC 4]
- (b) Coaxial Hoses: Celite shall ensure that the gasoline dispenser product/vapor return hoses are coaxial. [PTO 8165 PC 1]
- (c) Throughput Limit: Gasoline throughput shall not exceed 10,000 gallons per month [Ref: PTO 8165 PC 2]
- (d) Gas Tight Seals: Celite shall ensure that the gauging and/or sampling devices on the gasoline tank are equipped with gas-tight covers which shall be closed at all times except during gauging and sampling. [Ref: PTO 8165 PC 7]
- (e) Monitoring: Celite shall determine the volume of gasoline in gallons dispensed from the tank (throughput) each year.
- (f) Recordkeeping: Celite shall record the names of the gasoline suppliers and the monthly gasoline throughput. [Ref: PTO 8165 PC3]

D.7 **Abrasive Blasting Equipment.** All abrasive blasting activities performed on the Lompoc Plant shall comply with the requirements of the California Administrative Code Title 17, Sub-Chapter 6, Sections 92000 through 92530.

D.8 **Process Monitoring Systems - Operation and Maintenance.** All Lompoc plant process monitoring devices listed in Section 4.9.2 of this permit shall be properly operated and maintained according to manufacturer recommended specifications. Within 60 days of issuance of this permit, Celite shall submit a *Process Monitor and Calibration Maintenance Plan* for APCD review. Final plan approval shall occur within 90 days of permit issuance provided total District review time of the draft does not exceed 30 days. This Plan shall detail the manufacturer recommended maintenance and calibration schedules that Celite will implement. Where manufacturer guidance is not available, Celite shall use recommendations of comparable equipment manufacturers, when available, and good engineering judgment.

D.9 **Annual Compliance Verification Reports.** Celite shall submit an annual compliance verification report to the District no later than March 1. These reports shall be in a format approved by the District. Compliance with all required limitations shall be documented in the submittals. All records and other supporting information not included in the report shall be available to the District upon request. "Supporting information" includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring

instrumentation, and copies of all logs and reports required by the permit. Pursuant to Rule 212, the annual report shall include a completed *APCD Annual Emissions Inventory* questionnaire. Except where noted, the report shall include monthly summaries of the following information:

- a. Maximum (peak) production rate (in lbs/hour or tons/hour) achieved for the following:
  - (i) the primary crushers
  - (ii) each of the diatomaceous earth lines 3, 5, 6, 7 and 11
  - (iii) the central natural products system
  - (iv) the synthetic silicates production system
  - (v) the mortar production system
  - (vi) the pellet production system
  - (vii) the Chromosorb production system
  - (viii) the acid washed (AWFA) production system
  - (ix) the Celite Analytical Filter Aid (CAFA) system[Ref: PTO 5840 PC 3.2.1, 40 CFR 70.6]
- b. For each open baghouse in which a sock was repaired or replaced, the number of socks repaired or replaced in the baghouses, the approximate size of any hole, the name of the baghouse, and the date and shift during which the bag failure was observed and the repair work or replacement occurred. [Ref: PTO 5840 PC 3.2.2]
- c. For each fuel burned in the following equipment items, the type, amount (monthly and annually):
  - (i) Processing Line 3 Furnace
  - (ii) Processing Line 3 Kiln
  - (iii) Processing Line 5 Furnace
  - (iv) Processing Line 5 Kiln
  - (v) Processing Line 6 Furnace
  - (vi) Processing Line 6 Kiln
  - (vii) Processing Line 7 Furnace
  - (viii) Processing Line 7 Kiln
  - (ix) Processing Line 11 Furnace
  - (x) Processing Line 11 Furnace
  - (xi) the synthetic silicates dryers
  - (xii) the synthetic silicates boilers[Ref: PTO 5840 PC 3.2.3, PTO 9240-02]
- d. Fuel and hours usage for ICEs 8700, 8113, 8115, 8716 and 8717; fuel or hours usage for the ICEs with APCD IDs 1-03 through 1-13. [Ref: PTOs 8945 PC 11.c & 12 and PTO 8018 PC 5 & 6]
- e. Breakdowns and variances reported/obtained per Regulation V along with the excess emissions that accompanied each occurrence.
- f. Tons per year totals (permitted equipment) of all criteria pollutants (by each emission unit). SO<sub>x</sub> emissions shall be calculated per the SO<sub>x</sub> Compliance Monitoring Protocol.
- g. Gallons of gasoline dispensed from the gasoline tank each month.
- h. Exempt Emissions: On an annual basis, the ROC and NO<sub>x</sub> emissions from all permit exempt activities (excluding on-road vehicles), including mining activities (i.e., mining vehicles and equipment). Within 60 days of permit issuance Celite shall submit for District approval NO<sub>x</sub> and ROC emission factors for specific equipment categories to be used for calculating emissions from exempt equipment. Equipment categories shall include but not be limited to internal combustion engines, external combustion equipment, mining equipment, small miscellaneous equipment, etc.

D.10 **Condition Acceptance.** Acceptance of this operating permit by Celite shall be considered as acceptance of all terms, conditions, and limits of this permit. [Re: PTO 5840 PC 3.10]

- D.11 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit shall constitute grounds for the APCO to petition for permit revocation pursuant to Health and Safety Code section 42307 *et seq.* [Re: PTO 5840 PC 3.7]
- D.12 **Reimbursement of Costs.** All reasonable expenses, as provided for in APCD Rule 210, incurred for the APCD, APCD contractors, and legal counsel for all activities related to this permit and implementation and enforcement of all permit conditions, including implementation and enforcement of Regulation XIII (*Part 70 Operating Permits*), shall be reimbursed by Celite within 30 calendar days of invoicing by the District. [Re: PTO 5840 PC3.14, APCD Rule 210]
- D.13 **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the District or its agents, Celite shall make such records available or provide access to such facilities upon notice from the District. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A.
- D.14 **Compliance.** Nothing contained within this permit shall be construed to allow the violation of any local, State or Federal rule, regulation, ambient air quality standard or air quality increment. [Re: PTO 5840 PC 3.6]

- D.15 **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all written data, specifications and assumptions included with the application and supplements thereof (as documented in the District's project file) , and with the District's analyses contained within this permit (including any documents specifically referenced herein).” [Re: PTO 5840 PC 3.4]

AIR POLLUTION CONTROL OFFICER

\_\_\_\_\_  
\_\_\_\_\_  
Date

NOTES:

- (a) This permit supersedes all previous APCD PTO permits issued for the Lompoc Plant
- (b) Permit Reevaluation Due Date: April 11, 2003
- (c) Part 70 Operating Permit Expiration Date: April 11, 2005

**Insert Table 9.D**

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## **10.0 Attachments**

***10.1 Emission Calculation Documentation***

***10.2 Emission Calculation Spreadsheets***

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## 10.1 EMISSION CALCULATION DOCUMENTATION

### Celite Lompoc Plant

This attachment contains all relevant emission calculation information not already given in Section 4.0.

The default values for diesel fuel are:

Density = 7.4 lb/gal (36EAPI)  
LHV = 18,410 Btu/lb (129,700 Btu/gal)  
HHV = 18,919 Btu/lb (140,00 Btu/gal)

The default values for #6 fuel oil are:

Density = 7.95 lb/gal (36EAPI)  
LHV = 18,410 Btu/lb (129,700 Btu/gal)  
HHV = 18,867 Btu/lb (150,000 Btu/gal)

The default gasoline characteristics are:

Density = 6.5 lb/gal (36EAPI)  
HHV = 17,742 Btu/lb (125,000 Btu/gal)

Emission factors units (lb/MMBtu) are based on HHV.

ICE NO<sub>x</sub> controlled diesel emission factor consistent with Rule 333, *i.e.*, 8.4 g/bhp-hr.

$$EF_{lb/MMBtu} = [(8.4 \text{ g/bhp-hr}) \times (10^6/MM)] / [(453.6 \text{ g/lb}) \times (BSFC) \times (1.06)]$$

Combustion SO<sub>x</sub> emissions based on mass balance:

For fuel oil: SO<sub>x</sub> (as SO<sub>2</sub>) = (%S) x (ρ<sub>oil</sub>) x (20,000) / (HHV)  
for natural gas SO<sub>x</sub> (as SO<sub>2</sub>) = (0.169) x (ppmv S) / (HHV)

$$ICE \text{ } Q = (BSFC) * (bhp) * (\text{hours/time period}) / (HHV, \text{ Btu/gal})$$

Where: Q is fuel use BSFC is 7500 for the diesel ICEs and  
11,000 for the gasoline ICEs  
LCF is 1.06 for both fuels  
HHV is 140,000Btu/gal for diesel and 125,000 Btu/gal for gasoline

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## **10.2 Emission Calculation Spreadsheets**

Emission calculations are detailed in Section 4 and Attachment 10.1.

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### **10.3 Fee Calculations**

Emission fees for the Lompoc plant are based on a cost reimbursement basis pursuant to APCD Rule 210.

All work performed with respect to implementing the requirements of the Part 70 Operating Permit program are assessed on a cost reimbursement basis pursuant to APCD Rule 210.

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## **10.4 IDS Database Emission Tables**

See Table 5.6



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## **10.5 Equipment List**

See the tables beginning on the next page.

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## **10.6 Permit-exempt/Insignificant Activities List**

See the equipment listed in Section 3.1 as exempt from permit and the sources of fugitive emissions described in Section 4 (includes diesel tank emissions, which are approximately 0.1 TPY). In addition, the following is provided for combustion equipment.

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## **10.7 Celite's Alternative Sulfur Dioxide Monitoring Proposal**